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U. S. DEPARTMENT OF COMMERCE
BUREAU OF FISHERIES

FISHERY INDUSTRIES OF THE UNITED STATES

1928

By R. H. FIEDLER

FISHERIES DOCUMENT No. 1067

U. S. DEPARTMENT OF COMMERCE
R. P. LAMONT, Secretary
BUREAU OF FISHERIES
HENRY O'MALLEY, Commissioner

Bureau of Fisheries Document No. 1067

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APPENDIX IX TO REPORT OF COMMISSIONER OF FISHERIES
FOR THE FISCAL YEAR 1929

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FISHERY INDUSTRIES OF THE UNITED STATES, 1928 [1]

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FOREWORD

This report constitutes a yearbook on fishery statistics of the United States as well as a summary of activities of the division of fishery industries. As its name indicates, this division of the bureau is concerned with the activities and welfare of the fishery industries, including the commercial fisheries, the trade in fishery products, and the fish canning and preserving industries. Its functions are the collection and publication of fishery statistics, the prosecution of research designed to solve the technical problems of the industry, and the dissemination of authoritative and practical information to the fishery industries and the public. Results of technological investigations and marketing studies are published in separate documents as each project is completed. The information obtained from statistical surveys is published in Part 2 of this report, which includes all the detailed statistical information that has become available since

[1] Appendix IX to the Report of the U. S. Commissioner of Fisheries for 1929. Bureau of Fisheries Document No. 1067.

the issuance of the previous report,[2] together with such summarized statements and interpretations of the statistics as are deemed significant and useful. In the preparation of this report numerous members of the division's staff have taken part, and their assistance is appreciatively acknowledged.

Part 1. OPERATIONS OF THE DIVISION

COLLECTION OF STATISTICS

The statistical work of the division in 1928, as in former years, included the furnishing of statistics on the catch of fishery products and the gear employed in making the catch and statistics of related fishery industries. In the former group are those statistics that are intended primarily for the use of the fishery biologist, upon which to base wise conservation measures, although they are indirectly valuable for economic purposes. This is especially true of statistics for the landings of fish at principal fishing ports, which are published monthly. In the latter group are statistics that are of use mainly for economic or trade purposes. In this group are included statistics of the canned fishery products and by-products of the United States, cold-storage holdings of fish and amounts of fish frozen in the United States, fish and marine-animal oil production, and similar statistics.

That fishery statistics, both biological and trade, are becoming more generally appreciated by those interested in our fisheries is evidenced by the generous cooperation given the bureau by fishermen, fish wholesalers, those in related fishery industries, State fisheries agencies, and others. The bureau appreciates this cooperation and wishes to take this opportunity to thank the above for their support during the past year in an effort to give the fishing industry a statistical record upon which to base its activities. In this connection the bureau urges those in the industry to offer criticisms and suggestions for the betterment of statistics now being collected.

During 1928 unusual progress was made in the collection of statistics of the catch of fishery products in the United States. This was occasioned by greater cooperation with State fishery agencies and by the use of automobiles by agents, which has enabled them to canvass a larger territory than was formerly the case when travel was performed mainly by train. As a result, catch statistics for 1927 were obtained of the fisheries in our South Atlantic, Gulf, Pacific coast, and Great Lakes States and for the State of Connecticut. Continuous annual catch statistics are now available for the Great Lakes States from 1913, Pacific Coast States from 1922, Gulf States starting with 1927 (as it is now planned to canvass the latter States annually), and the State of Connecticut from 1924. The latest catch statistics now available on each geographical section are as follows: New England States, 1924; Middle Atlantic States, 1926; Chesapeake Bay States, 1925; South Atlantic, Gulf, Pacific coast, and Great Lakes States, 1927; and Mississippi River and tributaries, 1922. In addition to the general catch statistics, the collection and (or) publication of statistics on special subjects was continued during 1928 as follows: The landings of fish by American fishing vessels at

[2] Fishery Industries of the United States, 1927. By Oscar E. Sette and R. H. Fiedler, Appendix IX to the Report of the U. S. Commissioner of Fisheries for 1928, pp. 401–547. Bureau of Fisheries Document No. 1050.

the ports of Boston and Gloucester, Mass., Portland, Me., and Seattle, Wash., and landings of halibut at North Pacific coast ports (published monthly, and annual bulletins summarizing these landings for the year); catch of mackerel in the North Atlantic fishery; cold-storage holdings of frozen and cured fish and amount of fish frozen, which are furnished by the Bureau of Agricultural Economics (published monthly); production, consumption, and holdings of fish and marine-animal oils of the United States and Alaska (published quarterly by the Bureau of the Census); production of canned fishery products and by-products of the United States and Alaska during 1928; the catch of shad in the Potomac and Hudson Rivers and the catch of alewives in the Potomac River during 1928; transactions on the sponge exchange at Tarpon Springs, Fla., during 1928; volume of fishery products handled at the municipal fish wharf and market, Washington, D. C., during 1928; and volume of United States imports and exports of fishery products during 1928, furnished by the Bureau of Foreign and Domestic Commerce.

TECHNOLOGICAL INVESTIGATIONS

The fisheries industries of the United States are on the threshold of a new era. Revolutionary changes have taken place in the past decade, and still more are destined to occur in the next. Wiser use is being made of those resources that are taken from nature's greatest storehouse—the sea. A bystander, watching this development, has seen excessive overhead expenses reduced in fishing and in the preparation of fishery products; a larger number of inland towns being supplied with fresh fishery products in addition to those originally supplied in sealed tins; waste fishery products converted into valuable products of commerce; and studies of the nutritive value of fish and fishery products showing the necessity of these for the proper balancing of the diet of both man and beast. Much of this has been brought about as the direct result of applied fisheries technology, in which the Bureau of Fisheries has been largely instrumental.

The work of the division's technologists during the past year was concerned mainly with problems of net preservation, the utilization of by-products, the feeding value of marine products, and improved methods of handling fresh fish. In studying these problems, field work has increased greatly, as is attested by the fact that the Reedville laboratory was run all year instead of being closed at the end of the menhaden season. Summer laboratories also were in operation at Brunswick, Ga., and Erie, Pa. During the school year the bureau also had an employee working at Johns Hopkins University and another at the University of Wisconsin.

NET PRESERVATION

The work with net preservatives has continued with the perfection of treatments for use upon cotton nets in salt water, attention being paid to securing the most economical treatment. The treatment previously announced, which contains 6 pounds of pine tar, 12 pounds of coal tar, 2 ounces of mercuric oxide, and 5½ pounds of cuprous oxide ground to pass a 350-mesh screen has shown itself to be cheap and effective. The mercuric oxide may be omitted in salt water, but is well worth retaining in fresh water. Other treatments have

been studied, but few bid fair to replace this one, and hence no successors can be announced soon. The experiments with the test panels set out last year show that in all salt-water locations the section of the net treated with tar alone fouled badly. In most of the cases the fouling "bridged" across the 1-inch mesh, but the near-by sections that had been treated with cuprous oxide were fouled only slightly and in patches, presumably by growths that had floated against the net and found temporary anchorage. It was found that in some localities where fouling is not marked the amount of cuprous oxide might be halved safely. This is not advised, however, unless the nets are treated again in midseason. In sections such as the New Jersey coast the nets fouled badly, and even the best treatments should be repeated in midseason, and even then it would be best to increase the cuprous oxide to 8 pounds per 10 gallons. Nets placed in Puget Sound or similar localities do not foul but rot. It probably would be best to increase the strength of the mixture for use in similar localities. All this advice concerns practice designed to reduce to a minimum the cost of treating nets. It is estimated that by following the procedure recommended by the bureau the cost of preserving trap gear may be cut to about one-third of that prevailing where the best available commercial treatments are employed.

The investigators at the Erie station found that the deterioration of fish nets was due to bacteria alone, and demonstrated that the lake contains in all its reaches cellulose-digesting organisms that attack the cotton fiber. The concentration of the net-rotting organisms is greatest near shore. The slime found on the nets also affords bacteria a wonderful breeding ground. Since nets have been shown to harbor germs for some time after being dried in the usual manner, it is recommended that especial care be given to removing most of the contamination by thorough washing as soon as possible after removing from the lake. A search is being made for materials that may be added to the water used for washing in order to render the cleaning of the net more efficacious.

The bureau's trap-net treatment proved effective in fresh water. This treatment is flexible enough so that it was tried on gill nets of 70/6 thread to see what effect it would have upon the "fishing power" of the gear. Practical tests showed that these dark-colored nets, which had been reviewed so unfavorably by the fishermen themselves, caught very nearly as many herring as the untreated nets and showed the only difference, if any, in the incidental catch of whitefish. These practical tests showed that in Lake Erie the darkest treatments that the bureau has evolved are of practical use on gill nets, and hence the lighter treatments being perfected now may be expected to fish quite as well as untreated nets. Possibly nets treated with dark treatments would not show "fishing power" so nearly like the untreated nets in waters more clear than Lake Erie, but a practical fishing trial would be worth while in view of possible savings on gear.

BY-PRODUCTS

Menhaden.—The study of by-products problems includes as one of its most important phases a consideration of the menhaden industry. This industry is being studied very carefully because it is closely similar to the sardine, herring, and other waste-reduction industries,

and also because the industry has in recent years encountered difficult problems that must be solved if the menhaden factories are to regain the full measure of prosperity formerly associated with them.

The study of any by-product process must include cost estimates. This is true because in many processes, especially those using vacuum dryers and elaborate machinery, the cost of production is high and the overhead expense so large that unless supplies of raw material are very constant the profits are in danger of being engulfed by fixed expenses. The menhaden industry, though utilizing cheaper machinery, is now suffering from the effect of variable supplies because the catch has been small in the last three seasons. This decrease in the supply of raw material is no doubt due to the natural fluctuations that have characterized the menhaden catch since the beginning of the fishery, but the effect is aggravated because of the huge size of the present plants, which were built or enlarged when several very successful years followed each other closely. The technologists have made a preliminary study of costs in the menhaden industry in order to guide themselves in attacking the most important sources of loss. Those problems that they could not properly handle they discussed with plant managers, and the ones that were proper subjects for technological study were investigated on a commercial scale, if at all practicable.

It seems that there are two main sources of loss, each of which accounts for over 5 per cent of the total product. These are losses due to dissolved protein and oil in the waste liquors and the loss of nitrogen due to oxidation in the present flame dryers. These problems, therefore, have received first attention, and two small-scale commercial type machines have been tested. One showed promise, and a slightly altered type will be tested next year. The other, a dryer, showed excellent results but will be run again next season because the supply of fish last year was not regular enough to allow the technologists to gather sufficient data upon cost and efficiency.

It is equally as important to save oil and to improve its quality as to improve meal, for both represent nearly equal portions of the profits of the menhaden industry. The presence of free fatty acid detracts from the usefulness of oil, and if present in too great quantities actually changes the channels of trades into which the oil may enter. Preliminary experiments have shown conclusively that water increases the free fatty acid content of oil in storage tanks and that sun and rain do not improve the quality of fish oils. Next year the study of this matter will be continued to see what effect improved practice will have on sales prices.

Ground fish and waste fish.—The favorable reception of fresh and frozen fillets by the consuming public has indirectly stimulated another phase of the fishery by-products industry, which in turn places problems of importance before the bureau technologists. As a result of the increasing demand for packaged fish, large quantities of waste accumulated at central points. This waste must be disposed of as it easily becomes a nuisance. The situation has another aspect also. In order to supply the necessary amount of haddock and other fish for filleting, the use of steam trawlers is growing in importance. In this type of fishing large quantities of trash fish are also taken in the trawl net and are available for reduction, as well as the viscera from the cleaned edible fish. Besides the two above-mentioned cases, small quantities of waste are accumulated in isolated localities or city

fish markets; thus, there are three general conditions under which the supply of raw material accumulates.

The nature of the raw material makes the reduction of this waste more difficult than it would outwardly appear to be. The majority of the waste comes from nonoily fish having a high glue content. The presence of the gluey material causes difficulties in drying. In most of the centrally located plants a wet process is used, in which the material is cooked and pressed before drying is attempted. In this way the greater part of the gluelike material is eliminated, and difficulty in drying is not experienced. This process results in the loss of nitrogenous matter, but as this comes mainly from gelatin (a nitrogenous substance not as valuable as the other protein material) the decrease in the actual feeding value of the meal is probably not as great as it seems at first sight.

On board trawlers, where space is at a premium, the above-mentioned process is not practicable. Also, in the case of plants handling small amounts of material the cost of the additional equipment would be prohibitive unless extemporized equipment were utilized. For this reason, investigations have been conducted at the Reedville laboratory in an effort to develop a simple process applicable to trawler installation and small plants. This is a most difficult problem, for small plants and even larger ones utilizing vacuum-drying machinery work on a very narrow margin of profit. Large vacuum dryers are still subject to trouble due to sticking of the dried material and have a capacity much lower than would be expected on the basis of experience in drying other waste materials. The work upon the drying of "white fish meal" is being continued, for though much progress has been made, the results are not eminently satisfactory from a commercial standpoint.

Shrimp waste.—During the shrimp season of 1928 the bureau's technologists conducted experiments at Brunswick, Ga., upon the utilization of the waste accumulating during the process of heading and canning this crustacean. Four methods of reduction were adopted. These allow the waste to be handled with a minimum amount of interference with the plant operation—a most valuable matter in connection with the work of this industry. Shrimp packing is noted for the irregular manner in which raw material arrives, thereby taxing equipment and labor facilities to the utmost. Because of this fact, any proposed operations must not interfere with the primary operations. The proposed processes do not, as may be seen by the following description of one of them. The shrimp waste is collected by the men who previously placed the unpicked material on the tables, cooked, spread on the drying platform, and acidulated before the canning operations cease in the late afternoon. The time of boiling required is about 10 minutes, and 240 pounds of 60° sulphuric acid per ton of cooked waste is necessary. This is roughly 12 pounds per basket.

A second way of utilizing shrimp waste is to boil it vigorously for 10 minutes, then drain it on the floor of a cooling shed, where it is raked into layers not over 3 inches thick. The waste will cool rapidly and become dry enough so that it may be dried the next day in a simple shelf drier, which may be heated by oil stoves if quite small. The drying is continued until the waste may be ground easily, which corresponds to about 6 per cent water content.

The materials produced by the new methods are excellent for fertilizer and those low in salt content promise well as a feedstuff, although they have not been compared in actual feeding tests with "shrimp bran" dried in a steam drier. The product produced in the latter machine has been shown by preliminary experiments to be very valuable in feeding poultry and dairy cows. A valuable constituent is the iodine, which is present in larger amounts than in most fish meals and may be a great help to feeders encountering difficulties in regions where "big-neck" (goiter) now causes such losses. The mineral content also supplies material to replace the drain made upon the calcium and phosphorus stores of heavily-producing animals, such as dairy cows, laying hens, or swine being fattened for market. This drain is often so great as to remove so much calcium from the bones that they are weakened and fracture easily. In addition to showing how a valuable product may be placed upon the market, this work demonstrates the ease with which a nuisance-producing waste may be eliminated.

NUTRITIVE VALUE OF FISH

The studies upon new and upon improved marine feedstuffs have led naturally to a consideration of their food value. Products from the sea are by nature balanced in composition, for they come from a huge mixing bowl that suffers no local deficiencies of vital material as a result of man's interference, as too often happens on land. Therefore, fish products are a most valuable adjunct to the citizen's dietary and to the farmer's list of feeds. Not only is fish protein remarkably cheap, but it is good, as has been demonstrated by studies conducted by the bureau's investigator at Johns Hopkins University. These studies, as related previously, show haddock and herring protein to have a high supplementary value for cereal proteins, comparing very favorably in this respect with steak, liver, and kidney. In addition to this advantage, fish protein excells because it has associated with it many vitally needed elements, such as iodine, iron, and copper. The first of these plays a rôle in preventing thyroid disorders such as goiter; the others aid in the formation of hemoglobin in the blood. It is the effect of these accessory elements that is receiving a great deal of attention nowadays. It is true that there are available data from many different sources indicating that fish meal is more efficient, in dollars per hundred pounds gain in weight, in feeding swine than other protein concentrates; but the most interesting property of fish meals and other marine foods is to be found in their content of the chemical individuals called the "essential elements," because they play such a part in determining the processes of growth and well being. In order to learn more about the rôle played by the less common elements found in fish meal, and the possible use of marine products as corrective agents in animal feeding rather than as competitors or substitutes for products derived from the land, cooperative feeding tests have been arranged with State and Federal stations of the Department of Agriculture. A preliminary feeding test in which dried crab scrap was used has shown that hens fed with crab scrap added to their regular feed produced 938 eggs in a four-month period, during which time the hens used as controls produced 479 eggs.

As yet it has not been possible to determine what increase of iodine has taken place in the eggs or in milk in similar experiments, but this will be done soon because of the important part played by this substance in the diet of children, especially.

IMPROVED HANDLING OF FRESH FISH

Efforts are now being made to improve the handling of fresh fish in the South, it having been shown at Boston that advances can be made in this field. The greater part of the work in the South has been to minimize the handicap of hot weather by showing how refrigeration facilities may be utilized to their best advantage. The bureau is not conducting researches along this line, not having entered this field again after having done pioneer work in introducing the first brine freezers in America for the purpose of freezing fish, but is rather drawing to the attention of fishery operators the advantages that may be gained. A part of this program of education and assistance is the installation of a demonstration chilling tank at the fish freezer of a cooperating dealer in South Carolina and work on the adaptation of more recent methods of handling fish in a way suited to conditions in the South. At a meeting held in Louisiana a fishermen's and ice manufacturers' group was organized to study better ways of shipping and handling southern fish. Other groups have been helped, particularly in Texas, where State restrictions place a heavy burden upon the commercial fishermen.

The bureau's representative on the Boston Fish Pier has done much to help in the adoption of improved methods of unloading vessels and is aiding in drawing up plans for greater facilities needed at that point since the introduction of more trawlers and the growth of a desire to handle fish more expeditiously.

As a result of some studies conducted through the help of fishermen at Boston, the bureau has investigated the handling of cod livers on board vessels that do not carry reduction plants, and has shown that a few simple precautions and some care in handling will enable fishermen to bring in the livers in excellent shape. The problem now is one of price and lies between the producers and the buyers. A search is now being made for some process or machine more efficient than the present one, and for equipment suitable for schooners that now can not use "boilers" for lack of steam supply.

GENERAL SERVICE

The technologists of the division not only conduct research work but also disseminate information of a technological nature to the industry. This is done by answering, from our present fund of knowledge, inquiries coming by letter and by conferring with people who bring with them for discussion problems of a more intricate nature. Answering technological inquiries represents an important part of the work, for a great deal of the technologists' time is given to this service. In many cases the correspondence is lengthy, for there are very few sources of information other than the bureau, and there are no other sources of consultation that may be utilized. This service apparently is well known, for the inquiries are cosmopolitan in nature. Letters or visits have been received from people interested

in the fisheries of Canada, Mexico, England, Norway, Sweden, Portugal, South America, India, South Africa, Haiti, and Porto Rico.

No matter how well trained the new investigators may be in the basic sciences—and nowadays it is difficult to find chemists equipped for original investigations in very many of the diversified fields covered by fisheries technology—they must be introduced to actual fisheries operations. Therefore, the newer technologists are given an opportunity to see actual operations in representative business and typical locations. Many contacts have been made in this manner to the mutual benefit of industry and the bureau, for at the same time that the bureau's representatives are learning first-hand details about particular fishery businesses they are able to give suggestions for improvements by drawing upon the general fund of engineering and scientific knowledge or good practice in related industries.

MARKET AND INDUSTRIAL SURVEYS

Surveys of this description are made to supply the trade with useful market information regarding the distribution and consumption of fishery products and to supply descriptive and economic data on our fisheries and fishery industries.

GOLDFISH INDUSTRY

During the winter of 1928 a survey was made of the principal goldfish-producing areas of the United States. No previous surveys have been made of this industry, but as it now commands an important position among the fish-farming industries a survey was thought expedient.

The principal centers of the industry are in Maryland, Ohio, and Indiana, but many small farms are scattered throughout the country.

The American production of goldfish in 1928 amounted to 21,500,000 fish, having a value to the breeders of about $942,000. This consisted of 17,000,000 common goldfish, valued at $573,000, and 4,500,000 fancy gold-fish, valued at $369,000. The breeders do not keep records of their production by sizes or individual varieties, so figures on this phase of the production could not be obtained. The value was arbitrarily based on the price received by the producers for the common and comet varieties.

At present there are about 770 acres of ponds in the United States devoted to the culture of goldfish. These ponds range in size from one-fourth acre to 10 acres. They are supplied with water from streams, springs, wells, and rain water. It costs from $50 to $1,000 an acre to build these ponds, depending upon the type of ground upon which they are constructed. The usual cost, however, is $150 to $200 per acre.

Most of the goldfish are shipped from September until the last of May. During the summer it is too warm to ship very many fish in each can and therefore the cost of shipping them is considerably higher. The fish are shipped in large galvanized cans that hold from 100 to 1,000 fish, depending upon their size, the distance to be shipped, and the weather.

Most of the goldfish to-day are handled by the 5-and-10-cent stores and by drug stores as an advertising feature. Pet shops in most of

the large cities still carry them, however, and sell considerable numbers.

The full report of the survey is contained in Bureau of Fisheries Economic Circular No. 68, entitled "Goldfish Industry." This may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., for 5 cents.

PUBLICATIONS OF THE DIVISION

During the calendar year 1928 the following publications were prepared and issued by this division. The list does not include the monthly statistical bulletins of the landings of fish at Boston and Gloucester, Mass., Portland, Me., and Seattle, Wash., nor the monthly reports on cold-storage holdings of frozen fish. The documents may be purchased from the Superintendent of Documents, Government Printing Office, Washington, D. C., at the prices shown. The statistical bulletins are distributed free of charge upon request. Persons interested in securing the statistical bulletins as released may have their names placed on the bureau's mailing list upon request.

DOCUMENTS

Fishery Industries of the United States, 1926. By Oscar E. Sette. 8°, 147 pp. Document No. 1025. 25 cents.

Trade in fresh and frozen fishery products and related marketing considerations in Greater St. Louis, Mo. By R. H. Fiedler. 8°, 30 pp., 2 figs. Document No. 1026. 10 cents.

Containers and packages used in shipping shucked oysters. Results of a survey of shipping practices, with recommendations for improvements in the method now used. By Gerald A. Fitzgerald. 8°, 16 pp., 5 figs. Economic Circular No. 62. 5 cents.

Statistics of the catch of cod off the east coast of North America to 1926. By Oscar E. Sette. 8°, 12 pp., 1 fig. Document No. 1034. 5 cents.

Trade in fresh and frozen package fish products. By R. H. Fiedler. 8°, 12 pp., 1 fig. Economic Circular No. 63. 5 cents.

Trade in fresh and frozen fishery products and related marketing considerations in Jacksonville, Fla. By R. H. Fiedler. 8°, 26 pp., 2 figs. Document No. 1036. 10 cents.

Trade in fresh and frozen fishery products and related marketing considerations in Atlanta, Ga. By R. H. Fiedler. 8°, 18 pp. Document No. 1039. 5 cents.

STATISTICAL BULLETINS

Statement, by fishing grounds, of quantities and values of certain fishery products landed at Seattle, Wash., by American fishing vessels during the calendar year 1927. Statistical Bulletin No. 771.

Statement, by months, of quantities and values of certain fishery products landed at Boston and Gloucester, Mass., and Portland, Me., by American fishing vessels during the year 1927. Statistical Bulletin No. 772.

Statement, by fishing grounds, of quantities and values of certain fishery products landed at Boston and Gloucester, Mass., and Portland, Me., by American fishing vessels during the calendar year 1927. Statistical Bulletin No. 773.

Canned fishery products and by-products of the United States and Alaska, 1927. 14 pp. Statistical Bulletin No. 782.

Fisheries of New York, New Jersey, Pennsylvania, and Delaware, 1926. 7 pp. Statistical Bulletin No. 786.

Fisheries of Alaska, 1927. 4 pp. Statistical Bulletin No. 790.

Lake Fisheries, 1927. 3 pp. Statistical Bulletin No. 807.

Part 2. FISHERIES STATISTICS

REVIEW

According to the most recent statistics available, the fisheries of the United States and Alaska are in a sounder position than at any time in their history. They now employ nearly 127,000 commercial fishermen, and the annual catch amounts to nearly 3,000,000,000 pounds, valued at about $113,000,000. For transporting these products from the fishing grounds to market, or from port to port, over 4,000 persons are engaged aboard transporting vessels.

In 1928 the production of canned fishery products amounted to 617,328,000 pounds, valued at $95,872,000, and the output of by-products was valued at $14,881,000. Cold-storage holdings of fish averaged about 54,000,000 pounds monthly, while 113,638,000 pounds of fishery products were frozen. The production of fresh and frozen packaged fish amounted to 65,245,000 pounds, valued at $9,790,000. The production of goldfish was valued at about $1,000,000. Imports of fishery products were valued at $58,855,000, while exports were valued at $21,174,000. Compared with 1927, the value of canned fishery products and by-products was greater, more fish were frozen, larger quantities of packaged fish were produced, and the value of both imports and exports of fishery products was greater.

New England States.—The output of package fish in these States continued to increase rapidly, the production in 1928 being valued at over $9,000,000. To supply the demand for raw fish by the packers, more vessels fishing with otter trawls were added to the fleet, so that now 288 vessels of over 5 net tons are outfitted with this gear and operated from the three principal ports. Landings of fish at these ports by all vessels were larger in 1928 than in any year upon which there are records, and, also, the value was greater. The packaged-fish trade is now on a sounder basis, and methods used at the packing plants are being modernized. Larger quantities of packaged fish are being frozen, thereby making this product a more staple commodity of commerce. While Boston, Gloucester, and Portland continue to receive the greater portion of the landings of fish by vessels, larger quantities are being landed at other New England ports, especially at Vinal Haven, Me., and Groton, Conn. Sardine canning in Maine recovered from the slump of 1927 with a production valued at over $8,000,000.

Middle Atlantic States.—According to the latest general canvass of the fisheries of these States, made for 1926, the situation there is not encouraging. The production of many of the staple fish shows tremendous declines in 1926 under that for 1921. Notable examples of this are bluefish, which show a decline of 72 per cent; scup, 37 per cent; and squeteague or weakfish, 36 per cent.

New York City shared in the increases in the packaged-fish production, and landings of fresh fish by vessels in this area have increased accordingly. The menhaden industry recovered very slightly in 1928 from the previous year. The catch of shad in the Hudson River in 1928 was about three-fourths as large as the catch in 1927 and nearly equal to that made in 1926.

Chesapeake Bay States.—As the latest general canvass of the catch of fishery products for this region was made for 1925, no other later data are available on the general conditions of these States. How-

ever, an index may be obtained from statistics of the canning and by-products industries and certain other industries. The menhaden industry again suffered a poor year in 1928, the value of the products manufactured being one of the lowest on record. This situation should encourage those in this industry to improve methods in an effort to reduce overhead and to produce a high-grade product. The diversion of a greater amount of menhaden meal to feedstuffs should result in a better price for this product. To produce such a product would require but little additional expenditure in improving manufacturing methods.

In 1928 greater activity was evidenced in the alewife-canning industry, the value of the products being the highest on record. The oyster industry has regained its previous stride, although retail sales have not kept pace in some parts of the country. The crab industry recovered entirely from its previous poor years, and, according to reports of persons in the trade, the production was one of the largest on record. This section is rapidly becoming a factor in the production of packaged fish, especially packaged croaker and sea trout The catch of shad on the Potomac River in 1928 was larger than that made in any one of the past 27 years except 1922. The catch of alewife was larger than for any year since 1909 except 1924.

South Atlantic States.—According to the latest records the fisheries of these States have shown renewed activity, the production in 1927 exceeding that for 1923 by 14 per cent in quantity and 12 per cent in value. The fisheries of this region are confined largely to those along the shore, which are conducted by small operating units. For this reason the trade is confined chiefly to marketing primary products, except for canned shrimp and oysters. The production of canned shrimp in 1928 showed little change over the previous year, but there was a considerable gain in the production of oysters. A substantial gain in the output of menhaden products was registered in 1928.

Gulf States.—The fisheries of these States were more productive in 1927 than in any year upon which there are records since 1880, increasing 22 per cent in amount and 23 per cent in value, compared with the production in 1923. This was due chiefly to greater catches of shrimp and oysters. As with the South Atlantic States, the products of the fisheries here are marketed mainly fresh, except for canned shrimp and oysters. The production of canned shrimp in 1928 was considerably greater than in the previous year, although the market value did not increase correspondingly. The production of canned oysters in 1928 was but little different from the previous year. The quantity of sponges handled in the exchange in 1928 at Tarpon Springs, while above normal, varied but little from the amount handled in 1927.

Pacific Coast States.—Statistics for these States for 1927 reveal that the catch of fishery products that year was the largest on record, this being due mainly to greater catches of pilchard and tunalike fishes. In 1928 the pack of salmon was 44 per cent less than the previous year. This was due to smaller packs of pink and humpback salmon on Puget Sound, as 1928 was an "off" year. Compared with the previous "off" year—1926—there was an increase of about 1 per cent.

The pack of sardines was the largest on record in 1928, both in volume and value. The tuna-canning industry produced a smaller volume than in 1927, although the value was greater, being slightly under the highest value of any annual pack on record.

Unusual developments occurred in the mackerel-canning industry of California in 1928, the production being valued at about $2,000,000. In 1927 the production was so small that it was included in the statistics of other canned fish. Now mackerel is finding favor in the export trade with the Philippines.

The catch of the halibut fleet remained about the same in 1928 as in 1927, which was in excess of that for 1926; this in spite of the depleted condition of the fishery.

Lake fisheries.—The catch of fish by American fishermen in the lake fisheries in 1927 remained much the same as in the previous year, although there was a slight decline from the 10-year average. The average is being maintained by larger catches of some of the less favored species, while decreases are apparent in the catches of some of the choice species, such as the cisco of Lake Erie, which shows a decline of 81 per cent compared with the 10-year average. Increased catches were evidenced in every lake in 1927 over 1926, except in Lake Ontario, Lake Erie, and the international lakes.

Mississippi River and tributaries.—No recent general statistical canvass has been made for this section since 1922, and, therefore, recent developments can not be determined. A special canvass of the fisheries of Lakes Pepin and Keokuk for 1928 reveals a smaller catch, compared with that for 1927.

Alaska.—In 1928 the fishery industries in Alaska experienced one of the most productive seasons in history, producing fishery commodities valued at nearly $55,000,000. The salmon industry, always the most important, recovered entirely from the slump in 1927 and produced the third largest pack on record. The herring industry had a larger production than that for 1927, while the halibut industry produced less. The production of other products showed little variation when compared with the previous year.

Fisheries of the United States and Alaska

SUMMARY OF CATCH

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

	New England, 1924		Middle Atlantic, 1926		Chesapeake, 1925		South Atlantic, 1927		Gulf, 1927	
Fish	365,475	$12,017	119,021	$4,648	241,221	$6,092	217,306	$3,758	89,447	$4,352
Shellfish, etc	41,248	6,795	48,991	7,808	91,985	7,856	43,363	1,938	110,625	5,815
Whale products	99	6								
Total	406,822	18,818	168,012	12,456	333,206	13,948	260,669	5,696	200,072	10,167

	Pacific, 1927		Mississippi River and tributaries, 1922		Lakes, 1927		Alaska, 1928		Total for the various years	
Fish	627,512	$20,341	53,466	$3,310	81,327	$6,795	688,576	$17,255	2,483,351	$78,568
Shellfish, etc	18,519	1,638	52,268	1,194	6,332	237	1,595	88	414,926	33,369
Whale products	5,166	327					8,835	454	14,100	787
Total	651,197	22,306	105,734	4,504	87,659	7,032	699,006	17,797	2,912,377	112,724

NOTE.—Catch of shellfish on the lakes is for 1922.

Fisheries of the United States and Alaska—Continued

OPERATING UNITS: By districts

	New England 1924	Middle Atlantic 1926	Chesapeake 1925	South Atlantic, 1927	Gulf, 1927 [1]
Fishermen:					
On vessels	4,736	4,364	3,800	1,229	2,268
On boats and shore	10,271	5,607	20,993	10,298	13,085
Total	15,007	9,971	24,793	11,527	15,353
Vessels:					
Steam	64	24	44		
Net tonnage	6,149	3,038	5,010		
Motor	536	492	134	117	377
Net tonnage	11,878	6,321	1,307	2,403	5,158
Sail	15	101	396	60	122
Net tonnage	505	1,821	4,523	489	2,555
Total vessels	615	617	574	177	499
Total net tonnage	18,532	11,180	10,840	2,892	7,713
Boats:					
Motor	5,227	2,112	8,314	3,084	4,416
Other	4,795	2,392	8,707	4,139	4,385
Apparatus:					
Haul seines	171	412	418	767	770
Purse seines	154	52	56	54	2
Otter trawls (including all types and sizes)	387	196	11	647	1,639
Gill nets	11,248	4,348	22,393	19,264	2,359
Trammel nets				4	687
Pound nets, trap nets, and weirs	770	650	3,712	2,781	3,837
Stop nets		84	9		241
Fyke nets	717	5,130	4,131	800	
Bag nets and pocket nets	150	36			
Other nets [4]	45	183	1,924	364	7,021
Hooks, snoods, or baits	[5]	[5]	[5]	190,784	250,847
Eel pots and traps	4,231	7,991	[7] 10,153	3,800	
Lobster pots	256,662	28,900			
Crab and crawfish pots, traps, drags, etc	1,150			275	1,555
Clam dredges	222				2
Crab dredges		12	120		
Mussel dredges		6			
Oyster dredges	471	689	2,442	240	258
Scallop dredges and drags	3,089	1,357	685	808	
Crabs scrapes			1,403		
Tongs, rakes, hoes, forks, etc	3,310	2,553	13,355	2,011	2,462
Sponge apparatus					291
Other apparatus [8]	[5]	[5]	87	1,001	350

[1] Includes the operating units used in the fisheries of Lake Okeechobee, Fla.
[4] Includes set nets, dip nets, scap nets, reef nets, and other minor nets.
[5] Number not determined.
[7] Includes a few pots fished for catfish in Virginia.
[8] Includes slat traps or baskets, machine traps, sluiceways and traps, harpoons, spears, grabs, and other minor apparatus not included under "Other nets."

Fisheries of the United States and Alaska—Continued

OPERATING UNITS: By DISTRICTS—Continued

	Pacific, 1927	Mississippi River and tributaries, 1922	Lakes, 1927 [2]	Alaska, 1928	Total for the various years
Fishermen:					
On vessels	4,897		1,647	[3] 11,610	34,551
On boats and shore	15,617	12,310	4,178		92,359
Total	20,514	12,310	5,825	11,610	126,910
Vessels:					
Steam	6		145	7	290
Net tonnage	257		3,200	547	18,201
Motor	753		256	576	3,241
Net tonnage	12,341		2,752	10,794	52,954
Sail	8				702
Net tonnage	2,837				12,730
Total vessels	767		401	583	4,233
Total net tonnage	15,435		5,952	11,341	83,885
Boats:					
Motor	6,737	4,597	1,283	2,218	37,988
Other	1,049	10,941	1,085	4,667	42,160
Apparatus:					
Haul seines	236	708	247	145	3,874
Purse seines	309			684	1,311
Lampara nets	294				294
Otter trawls (including all types and sizes)					2,880
Beam trawls	52			8	60
Paranzella nets	14				14
Gill nets	5,631	866	105,732	3,877	175,718
Trammel nets	61	459			1,211
Pound nets, trap nets, and weirs	821	11	8,082	767	21,431
Stop nets					334
Fyke nets	816	49,652	2,373		63,619
Bag nets and pocket nets	89				275
Other nets [4]	341				9,878
Hooks, snoods, or baits	2,141,004	[5]	689,753	[6]	
Fish wheels	54			234	288
Eel pots and traps					26,175
Lobster pots					285,562
Shrimp nets and traps		4,360			4,360
Crab and crawfish pots, traps, drags, etc	17,835		5,255	730	26,800
Clam dredges					224
Crab dredges					132
Mussel dredges					6
Oyster dredges					4,100
Scallop dredges and drags					5,939
Crab scrapes					1,403
Tongs, rakes, hoes, forks, etc	3,060	1,810	244		28,805
Crowfoot bars (pairs)		3,490	311		3,801
Abalone outfits	16				16
Sponge apparatus					291
Other apparatus [8]	50	[5]	4		

[2] The crawfish pots, crowfoot bars, forks, etc., are for 1922.
[3] Includes persons in shore and boat fisheries.
[4] Includes set nets, dip nets, scap nets, reef nets, and other minor nets.
[5] Number not determined.
[6] There were 58,732 lines used. The number of hooks was not determined.
[8] Includes slat traps or baskets, machine traps, sluiceways and traps, harpoons, spears, grabs, and other minor apparatus not included under "Other nets."

NOTE.—Whaling apparatus, the number of which was not determined, was used in the Pacific and Alaska districts.

Fisheries of the United States and Alaska—Continued

CATCH: BY DISTRICTS

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Species	New England, 1924		Middle Atlantic, 1926		Chesapeake, 1925		South Atlantic, 1927		Gulf,[1] 1927	
FISH										
Albacore			35	$1						
Alewives	4,025	$53	2,495	47	25,611	$294	14,123	$149		
Amberjack							9	(3)	11	(3)
Angelfish and spadefish					4	(3)	24	1	54	$2
Barracuda									1	(3)
Black bass					93	15	235	31	514	45
Bluefish	82	21	922	216	215	27	1,637	147	703	55
Blue runner or hardtail							88	3	813	19
Bonito	18	2	598	46	304	17	15	(3)	40	1
Bowfin					25	1	28	1		
Buffalofish									25	
Butterfish	1,081	89	4,089	320	6,113	268	342	11	2	(3)
Cabio					3	(3)			9	(3)
Carp (German)	39	5	600	94	661	48	632	36		
Catfish and bullheads			221	19	1,009	58	2,402	92	3,409	162
Cero and kingfish							3,356	231	1,264	81
Cigarfish									311	9
Cod	89,218	3,076	4,874	233	17	(3)	1	(3)		
Crappie							376	28	654	21
Crevalle					701	25	210	7	98	3
Croaker			3,358	129	25,252	711	3,987	79	413	15
Cusk	4,227	81								
Drum, black			35	1	253	4	98	4	1,790	57
Drum, red			18	(3)	130	2	270	13	2,872	238
Eels	858	88	823	104	447	53	160	12		
Flounders	30,855	1,339	10,520	609	700	46	385	25	350	31
Garfish							3	(3)		
Gizzard shad					381	10	60	1		
Goldfish					3	(3)				
Grayfish	22	(3)	7	(3)						
Groupers							86	4	4,723	148
Grunts							35	2	81	3
Haddock	93,519	2,657	17,023	597	2	(3)				
Hake	18,499	307	627	16	12	(3)				
Halibut	4,501	789	10	4						
Harvestfish					46	2	937	29		
Herring, sea	60,236	662	238	7						
Hickory shad	21	1	19	1	256	12	605	41		
Hog-choker					24	1				
Hogfish							3	(3)	30	1
Jewfish							17	(3)	314	10
King whiting			101	16	126	9	718	44	138	6
Ladyfish									176	5
Mackerel	26,653	1,519	2,946	196	21	2				
Menhaden	7,536	79	39,891	162	150,493	1,435	157,965	689	13,466	61
Moonfish							4	(3)	1	(3)
Mullet and mullet roe			29	2	137	9	11,377	523	29,392	1,221
Mummichog			9	1						
Muttonfish							129	7	32	3
Paddlefish and paddlefish roe									6	(3)
Perch, white			198	24	1,057	95	505	41		
Perch, yellow			64	9	311	33	118	7		
Permit							9	(3)	52	2
Pigfish					142	8	303	8	36	1
Pike (jacks) and pickerel			1	(3)	89	20	22	3		
Pilotfish			4	(3)					7	(3)
Pinfish					1	(3)	330	10	16	1
Pollock	8,295	221	126	6						
Pompano			1	(3)	5	1	238	47	455	89
Porgies									96	4
Porkfish									12	1
Salmon: Atlantic	13	4								
Scup	1,352	70	3,504	221	447	31	16	1		
Sea bass	82	8	2,370	205	106	8	520	44	51	5
Sea gar									10	1
Sea robin			53	1	50	(3)				
Shad	516	38	952	234	7,364	1,637	3,104	621		
Sharks	51	2	64	2	17	1	8	(3)	1,200	9
Sheepshead (salt-water)					(3)	(3)	77	4	1,101	64

[1] Includes the catch of fish taken in Lake Okeechobee, Fla.
[3] Less than 500 pounds or dollars.

Fisheries of the United States and Alaska—Continued

CATCH: BY DISTRICTS—Continued

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Species	New England, 1924		Middle Atlantic, 1926		Chesapeake, 1925		South Atlantic, 1927		Gulf,[1] 1927	
FISH										
Silversides			63	$5						
Skates	55	$1	88	3	24	(2)	1	(2)		
Smelt	688	153	(2)	(2)						
Snapper, mangrove							41	$2	187	$7
Snapper, red							124	12	11,899	974
Snook							226	11	471	18
Spanish mackerel			14	2	128	$17	2,122	171	4,772	339
Spot			1,758	108	1,977	100	2,597	67	254	10
Squeteague	102	14	9,401	601	13,925	669	5,474	360	5,829	580
Striped bass	71	14	197	48	2,235	392	745	121		
Sturgeon and sturgeon roe	11	3	23	8	93	28	43	6	24	6
Sucker	273	23	194	28	8	(2)	17	1		
Sunfish					8	(2)	329	10	932	31
Swellfish			13	(2)	35	(2)				
Swordfish	2,882	528	61	11						
Tang									1	(2)
Tautog	395	34	82	7	3	(2)				
Ten pounder									2	(2)
Thimble-eyed mackerel			122	5	19	1				
Tilefish	238	17	1,802	111						
Tomcod and tomcod roe	81	1	58	3	18	(2)				
Tripletail					(2)	(2)	1	(2)	179	5
Tuna	232	12	144	12					1	(2)
Turbot									1	(2)
Whitebait			18	1						
Whiting	8,123	85	7,521	156	114	2				
Yellowtail							19	1	167	7
Miscellaneous fish	625	21	637	16	6	(2)			(2)	(2)
Total	365,475	12,017	119,021	4,648	241,221	6,092	217,306	3,758	89,447	4,352
SHELLFISH, ETC.										
Clams:										
Hard	1,679	505	1,277	626	1,190	469	372	79	954	42
Cockle	13	5								
Surf or skimmers			59	15						
Soft	6,259	557	409	81						
Razor	23	3								
Conchs									5	(2)
Crabs:										
Stone							6	1	58	10
Soft			163	48	3,748	422	269	44	145	50
Hard	1,976	62	231	14	25,853	827	1,146	34	3,682	124
King			2,888	13						
Sand	10	(2)								
Crawfish					(2)	(2)				
Lobsters:										
Common	9,716	3,072	1,119	331						
Spiny							261	21	131	11
Mussels			257	11						
Octopus							2	(2)		
Oysters: Eastern	11,302	2,070	39,511	6,171	60,264	6,022	10,447	458	36,013	2,169
Periwinkles	3	1								
Scallops:										
Sea	339	104	1,115	284						
Bay	929	304	300	92	361	74	835	120	13	5
Shrimp	5	3	43	4	1	(2)	29,992	1,173	68,877	2,344
Squid	3,075	76	1,576	100	454	26	2	(2)		
Frogs			2	(2)						
Sponges									600	1,035
Terrapin			1	1	10	6	20	8	88	21
Turtles			28	3	4	(2)	11	(2)	59	4
Miscellaneous shellfish, etc.	5,919	33	12	14	100	10				
Total	41,248	6,795	48,991	7,808	91,985	7,856	43,363	1,938	110,625	5,815
WHALE PRODUCTS [4]										
Oil, sperm	99	6								
Grand total	406,822	18,818	168,012	12,456	333,206	13,948	260,669	5,696	200,072	10,167

[1] Includes the catch of fish taken in Lake Okeechobee, Fla.
[2] Less than 500 pounds or dollars.
[4] The weight of the whales caught was not determined; therefore, the weight of the manufactured products is shown.

Fisheries of the United States and Alaska—Continued

CATCH: By DISTRICTS—Continued

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Species	Pacific, 1927		Mississippi River and tributaries, 1922		Lakes, 1927		Alaska, 1928		Total for the various years	
FISH										
Albacore	4,579	$517							4,614	$518
Alewives									46,254	543
Amberjack									20	(3)
Anchovies	368	4							368	4
Angelfish and spadefish									82	3
Barracuda	6,200	596							6,201	596
Black bass			74	$11					916	102
Bluefish									3,559	466
Blue pike					7,324	$561			7,324	561
Blue runner or hardtail									901	22
Bonito	1,717	50							2,692	116
Bowfin			190	6					243	8
Buffalofish			17,267	1,014					17,292	1,015
Butterfish									11,627	688
Burbot					511	20			511	20
Cabio									12	(3)
Carp (German)	1,053	31	18,338	872	3,669	163			24,992	1,249
Catfish and bullheads	371	56	8,093	713	815	80			16,320	1,180
Cero and kingfish									4,620	312
Chubs					6,616	597			6,616	597
Chubs (tullibee)					662	31			662	31
Cigarfish									311	9
Cisco					2,350	289			2,350	289
Cod	5,355	305					1,905	$10	101,370	3,624
Crappie			512	49					1,542	98
Crevalle									1,009	35
Croaker									33,010	934
Cusk									4,227	81
Dolly Varden trout							46	5	46	5
Drum, black									2,176	66
Drum, red									3,290	253
Eels	(3)	(3)	16	1					2,304	258
Flounders	13,391	742					1	(3)	56,202	2,792
Garfish									3	(3)
Gizzard shad									441	11
Goldfish									3	(3)
Grayfish	415	6							444	6
Groupers									4,809	152
Grunts									116	5
Haddock									110,544	3,254
Hake	85	2							19,223	325
Halibut	11,655	1,557					35,074	3,094	51,240	5,444
Hardhead	33	3							33	3
Harvestfish									983	31
Herring, lake					22,177	763			22,177	763
Herring, sea	2,034	32					134,020	1,340	196,528	2,041
Hickory shad									901	55
Hog-choker									24	1
Hogfish									33	1
Horse mackerel	467	18							467	18
Jewfish									331	10
Kingfish (California)	529	16							529	16
King whiting									1,083	75
Ladyfish									176	5
Lake trout					10,493	1,720			10,493	1,720
Lingcod	1,640	65					13	(3)	1,653	65
Mackerel	4,741	121							34,361	1,838
Menhaden									369,351	2,426
Moon-eye			3	(3)					3	(3)
Moonfish									5	(3)
Mullet and mullet roe	40	4							40,975	1,759
Mummichog									9	1
Muttonfish									161	10
Paddlefish and paddlefish roe			1,411	163					1,417	163
Perch, white	323	17							2,083	177
Perch, yellow			22	2	4,995	349			5,510	400
Permit									61	2
Pigfish									481	17
Pike (jacks) and pickerel			20	2	398	25			530	50
Pilchard	342,275	1,827							342,275	1,827
Pilotfish									11	(3)
Pinfish									347	11
Pollock									8,421	227

[3] Less than 500 pounds or dollars.

Fisheries of the United States and Alaska—Continued

CATCH: BY DISTRICTS—Continued

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Species	Pacific, 1927		Mississippi River and tributaries, 1922		Lakes, 1927		Alaska, 1928		Total for the various years	
FISH										
Pompano	55	$6							754	$143
Porgies									96	4
Porkfish									12	1
Quillback			765	$59					765	59
Rock bass	526	37	3	(3)					529	37
Rockfishes	6,898	315					4	(3)	6,902	315
Sablefish	4,113	242					387	$12	4,500	254
Salmon:										
Atlantic									13	4
Pacific—										
King, chinook, or spring	44,883	5,098					13,131	463	58,014	5,561
Red or sockeye	8,050	1,129					192,812	4,977	200,862	6,106
Coho or silver	22,665	1,699					29,852	724	52,517	2,423
Humpback or pink	41,370	1,363					190,075	4,952	231,445	6,315
Chum or keta	14,825	404					91,199	1,674	106,024	2,078
Sauger pike			5	1	1,246	$98			1,251	99
Sculpin	114	10							114	10
Scup									5,319	323
Sea bass	468	21							3,597	291
Sea bass, white (California)	2,273	218							2,273	218
Sea gar									10	1
Sea robin									103	1
Shad	5,945	176							17,881	2,706
Sharks									1,340	14
Sheepshead (salt-water)									1,178	68
Sheepshead (fresh-water)			5,261	290	4,361	95			9,622	385
Sheepshead (Pacific coast)	159	6							159	6
Silversides									63	5
Skates	264	5							432	9
Skipjack	33,808	1,261							33,808	1,261
Smelt	2,713	90					32	2	3,433	245
Snapper, mangrove									228	9
Snapper, red									12,023	986
Snook									697	29
Spanish mackerel									7,036	529
Splittail	11	1							11	1
Spot									6,586	285
Squawfish	8	1							8	1
Squeteague									34,731	2,224
Steelhead trout	4,363	312					25	2	4,388	314
Striped bass	649	92							3,897	667
Sturgeon and sturgeon roe	215	13	11	1	41	17			461	82
Sturgeon, shovel-nosed			229	23					229	23
Sucker	1	(3)	700	63	4,765	298			5,958	413
Sunfish			375	25					1,644	66
Swellfish									48	(3)
Swordfish	130	12							3,073	551
Tang									1	(3)
Tautog									480	41
Ten pounder									2	(3)
Thimble-eyed mackerel									141	6
Tilefish									2,040	128
Tomcod and tomcod roe	1	(3)							158	4
Tripletail									180	5
Tuna	4,898	312							5,275	336
Turbot									1	(3)
White bass			65	5	126	13			191	18
Whitebait	134	11							152	12
Whitefish	313	28			5,463	1,011			5,776	1,039
Whiting									15,758	243
Yellow bass			8	1					8	1
Yellow pike			25	4	3,025	540			3,050	544
Yellowfin tuna	25,934	1,304							25,934	1,304
Yellowtail	4,225	195							4,411	203
Miscellaneous fish	230	11	73	5	2,290	125			3,861	178
Total	627,512	20,341	53,466	3,310	81,327	6,795	688,576	17,255	2,483,351	78,568

[3] Less than 500 pounds or dollars.

Fisheries of the United States and Alaska—Continued

CATCH: BY DISTRICTS—Continued

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Species	Pacific, 1927		Mississippi River and tributaries, 1922		Lakes,[2] 1927		Alaska, 1928		Total for the various years	
SHELLFISH, ETC.										
Abalone	563	$113							563	$113
Clams:										
Hard	250	37							5,722	1,758
Cockle	1	1							14	6
Surf or skimmers									59	15
Soft	25	13							6,693	651
Razor	2,023	309					367	$21	2,413	333
Pismo	33	15							33	15
Mixed	28	12							28	12
Conchs									5	(3)
Crabs:										
Stone									64	11
Soft									4,325	564
Hard	5,271	378					311	26	38,470	1,465
King									2,888	13
Sand									10	(3)
Crawfish	138	17	8	$1	82	$3			228	21
Lobsters:										
Common									10,835	3,403
Spiny	1,491	276							1,883	308
Mussels	3	(3)							260	11
Mussel shells, fresh-water			51,768	1,051	6,246	218			58,014	1,269
Octopus	139	10							141	10
Oysters:										
Eastern	169	77							157,706	16,967
Western	619	287							619	287
Pearls				46		9				55
Periwinkles									3	1
Scallops:										
Sea									1,454	388
Bay	11	3							2,449	598
Shrimp	1,736	34	147	15			917	41	101,718	3,614
Slugs				55		7				62
Squid	6,014	56							11,121	258
Frogs			232	20					234	20
Sponges									600	1,035
Terrapin									119	36
Turtles			97	3	1	(3)			200	10
Miscellaneous shellfish, etc.	5	(3)	16	3	3	(3)			6,055	60
Total	18,519	1,638	52,268	1,194	6,332	237	1,595	88	414,926	33,369
WHALE PRODUCTS [4]										
Oil, sperm							703	37	802	43
Oil, whale	5,166	327					5,480	343	10,646	670
Whale meal and scrap							2,652	74	2,652	74
Total	5,166	327					8,835	454	14,100	787
Grand total	651,197	22,306	105,734	4,504	87,659	7,032	699,006	17,797	2,912,377	112,724

[2] Figures are for 1927, except those for shellfish, etc., which are for 1922.
[3] Less than 500 pounds or dollars.
[4] The weight of the whales caught was not determined; therefore, the weight of the manufactured products is shown.

Fisheries of the United States and Alaska—Continued

CATCH: BY STATES [1]

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

State	Marine and coastal rivers		Mississippi River and tributaries		Lakes [2]		Total	
Alabama	10,076	$437	1,243	$28			11,319	$465
Arkansas			22,795	760			22,795	760
California	491,347	10,059					491,347	10,059
Connecticut	25,770	2,007					25,770	2,007
Delaware	33,258	1,030					33,258	1,030
Florida	134,057	6,222			4,366	$201	138,423	6,423
Georgia	47,607	697					47,607	697
Illinois			22,598	1,079	388	58	22,986	1,137
Indiana			12,577	437	1,197	126	13,774	563
Iowa			6,761	326			6,761	326
Kansas			615	26			615	26
Kentucky			2,893	167			2,893	167
Louisiana	56,208	2,863	10,486	573			66,694	3,436
Maine	116,707	4,137					116,707	4,137
Maryland	56,978	4,863					56,978	4,863
Massachusetts	243,363	10,801					243,363	10,801
Michigan					37,328	3,273	37,328	3,273
Minnesota			5,660	230	12,167	584	17,827	814
Mississippi	34,503	1,259	3,328	191			37,831	1,450
Missouri			1,566	104			1,566	104
Nebraska			135	15			135	15
New Hampshire	447	56					447	56
New Jersey	73,299	6,254					73,299	6,254
New York	60,721	5,129			2,020	258	62,741	5,387
North Carolina	144,466	2,777					144,466	2,777
Ohio			702	30	17,629	1,090	18,331	1,120
Oklahoma			363	31			363	31
Oregon	34,195	3,103					34,195	3,103
Pennsylvania	735	43	49	2	4,408	512	5,192	557
Rhode Island	20,535	1,819					20,535	1,819
South Carolina	8,374	350					8,374	350
South Dakota			101	4			101	4
Tennessee			5,494	188			5,494	188
Texas	21,083	1,054	184	19			21,267	1,073
Virginia	276,228	9,085					276,228	9,085
Washington	125,655	9,146					125,655	9,146
West Virginia			95	8			95	8
Wisconsin			8,089	286	12,522	1,130	20,611	1,416
Alaska	699,006	17,797					699,006	17,797
Total	2,714,618	100,988	105,734	4,504	92,025	7,232	2,912,377	112,724

TRANSPORTING UNITS: BY DISTRICTS

Items	New England, 1924	Middle Atlantic, 1926	Chesapeake, 1925	South Atlantic, 1927	Gulf, 1927	Pacific, 1922	Mississippi River and tributaries, 1922	Lakes, 1922	Alaska, 1928	Total for the various years
Persons engaged	278	89	985	208	136	474	30	162	1,755	4,117
Vessels:										
Steam	3	1	1			5		6	27	43
Net tonnage	59	36	76			138		126	30,343	30,778
Motor	154	62	433	75	63	148	13	97	441	1,486
Net tonnage	1,831	924	5,180	822	795	2,301	214	831	13,551	26,449
Sail	5		89	40	5	5			5	149
Net tonnage	437		2,907	369	77	1,235			10,214	15,239
Barges						14			1	15
Net tonnage						989			225	1,214
Total vessels	162	63	523	115	68	172	13	103	474	1,693
Total net tonnage	2,327	960	8,163	1,191	872	4,663	214	957	54,333	73,680

[1] Statistics for the New England States are for 1924; Middle Atlantic States, 1926; Chesapeake Bay States, 1925; South Atlantic and Gulf States, 1927; Pacific Coast States, 1927; Mississippi River and tributaries, 1922; Lake States, 1927, except that the fisheries for shellfish, etc., are for 1922; and Alaska, 1928.

[2] Includes Lake Ontario, Lake Erie, Lake Huron, Lake Michigan, Lake Superior, Rainy Lake, Namakan Lake, Lake of the Woods, Lake Okeechobee, and several mussel streams tributary to Lakes Erie and Michigan.

CANNED FISHERY PRODUCTS AND BY-PRODUCTS

The output of canned fishery products and by-products in the United States and Alaska in 1928 was valued at $110,752,811, which was greater than for any year for which there are records. Larger packs were reported for almost every commodity. Of the total, canned products comprised $95,871,855 and by-products $14,880,956, an increase of 18 per cent in the value of canned products and 16 per cent in the value of by-products, when compared with the respective values of the previous year.

Fishery products were canned at 481 establishments in the United States and Alaska in 1928. The combined output of these canneries amounted to 15,629,980 standard cases. The net weight of the products canned amounted to 617,327,527 pounds.

Canned fishery products and by-products were prepared in 24 States and Alaska in 1928. Alaska ranked first in value of these products, accounting for 43 per cent of the total. Salmon was the leading product canned there. California, with her important sardine and tuna canning industries, ranked second with 22 per cent of the total value; while Maine, where canned sardines are the most important commodity, ranked third with 9 per cent of the total value. Considering the output by geographical sections, the Pacific coast and Alaska accounted for 74 per cent of the total value of canned products and by-products.

Canned fishery products and by-products of the United States and Alaska, 1928

SUMMARY OF PRODUCTION: BY COMMODITIES

Products	Number of plants	Standard cases	Pounds	Value
Canned products:				
Salmon—				
United States	54	842,903	40,459,344	$9,254,258
Alaska	153	6,083,903	292,027,344	45,383,885
Sardines—				
Maine	38	2,055,763	51,394,075	8,076,546
California	28	2,771,527	133,033,296	9,658,822
Tuna and tunalike fishes	16	1,216,222	29,189,328	8,374,030
Mackerel	22	398,903	19,147,344	1,714,020
Alewives	28	50,674	2,432,352	150,878
Alewife roe	28	56,392	2,706,816	288,592
Shad	18	23,447	1,125,456	110,006
Shad roe	17	4,130	198,240	123,840
Miscellaneous fish, caviar, roe, and eggs	38	228,103	10,948,944	1,997,732
Oysters	62	503,952	7,559,280	2,760,576
Clam products	54	531,640	[1] 12,746,700	2,623,598
Shrimp	71	851,831	13,850,688	5,181,547
Crabs	3	1,624	77,952	44,536
Miscellaneous shellfish	9	8,966	430,368	128,989
Total	[2] 481	15,629,980	617,327,527	95,871,855

	Quantity	Value
By-products:		
Shell products (tons)	306,013	$2,459,424
Scrap, meal and bran (do)	104,519	5,382,143
Fish and whale oils (gallons)	12,145,577	5,149,618
Miscellaneous by-products		1,889,771
Total		14,880,956
Grand total		110,752,811

[1] "Cutout" or "drained" weights of can contents are included for whole and minced clams and gross can contents for chowder, soup, bouillon, broth, and juice.

[2] Exclusive of duplication.

Canned fishery products and by-products of the United States and Alaska, 1928—Continued

VALUE OF PRODUCTION: BY STATES

State	Canned products	By-products (including menhaden)	Total
Maine	$9,030,205	$387,351	$9,417,556
Massachusetts	1,452,031	1,805,103	3,257,134
Rhode Island, Connecticut, New York, New Jersey, Indiana, Wisconsin, and Minnesota	992,525	571,694	1,564,219
Pennsylvania and Delaware		423,964	423,964
Maryland	402,581	445,509	848,090
Virginia	300,744	1,600,005	1,900,749
North Carolina	158,483	927,039	1,085,522
South Carolina	839,623	85,125	924,748
Georgia and Florida	1,555,759	911,280	2,467,039
Alabama	577,408	43,149	620,557
Mississippi	1,746,261	132,859	1,879,120
Louisiana	2,754,112	1,202,091	3,956,203
Texas	304,486	25,522	330,008
Washington	6,008,603	65,970	6,074,573
Oregon	4,371,591	43,815	4,415,406
California	19,878,945	4,022,642	23,901,587
Alaska	45,498,498	2,187,838	47,686,336
Total	95,871,855	14,880,956	110,752,811

Value of canned fishery products and by-products of the United States and Alaska, 1921 to 1928

Year	Canned products	By-products (including menhaden)	Total
1921	$46,634,706	$8,351,827	$54,986,533
1922	60,464,947	11,390,693	71,855,640
1923	72,445,205	12,634,590	85,079,795
1924	72,164,589	10,308,990	82,473,579
1925	80,577,138	14,600.198	95,177,336
1926	86,193,240	12,133,110	98,326,350
1927	81,384,133	12,793,256	94,177,389
1928	95,871,855	14,880,956	110,752,811

CANNED PRODUCTS

The value of fishery products canned in 1928 was 18 per cent greater than in the previous year. Salmon was the most important item and contributed 57 per cent of the total value; sardines were next, with 18 per cent; and tuna followed, with 9 per cent. The remainder of the total value was made up mainly by shrimp, oysters, and clam products.

Value of canned fishery products, 1921 to 1928

Year	Salmon	Sardine	Tuna	Oyster	Shrimp	Clam	Other	Total
1921	$28,867,169	$6,307,362	$3,074,626	$2,179,271	$3,804,781	$1,166,507	$1,234,990	$46,634,706
1922	38,420,717	9,111,589	4,511,873	2,423,616	3,064,087	1,716,365	1,216,700	60,464,947
1923	45,533,573	9,896,796	6,914,760	2,720,073	4,381,534	1,710,616	1,287,853	72,445,205
1924	42,401,602	12,636,599	5,756,586	2,478,044	4,608,950	2,161,389	2,121,419	72,164,589
1925	47,369,507	13,097,318	8,499,080	3,721,159	3,782,819	1,850,378	2,256,877	80,577,138
1926	56,219,306	14,534,792	5,282,283	2,026,569	4,122,092	2,004,650	2,003,548	86,193,240
1927	45,728,761	14,517,814	8,368,227	2,367,949	5,321,652	2,744,954	2,334,776	81,384,133
1928	54,638,143	17,735,368	8,374,030	2,760,576	5,181,547	2,623,598	4,558,593	95,871,855

Salmon.—In 1928 salmon were canned at 153 plants in Alaska, 35 in Washington, 17 in Oregon, and 2 in California. Compared with the previous year, there was an increase of 18 plants in Alaska and a decrease of 5 in Washington, 2 in Oregon, and 3 in California. The combined output of the 207 plants amounted to 6,926,806 standard cases of forty-eight 1-pound cans, valued at $54,638,143. Of the total, 842,903 cases, valued at $9,254,258, were packed in the Pacific Coast States and 6,083,903 cases, valued at $45,383,885, in Alaska. The pack for the Pacific Coast States was 44 per cent less than a year ago, due mainly to the smaller pack in Puget Sound of humpback or pink salmon, as 1928 was the "off year." Compared with 1926, the previous "off year," there was an increase of 1 per cent in the pack. The pack in Alaska was 70 per cent greater than in the previous year and was occasioned by larger packs of virtually every species.

The world pack of canned salmon in 1928 amounted to 10,654,781 cases, which was an increase of 44 per cent over that of the previous year. Of the total, 6,926,806 cases, or 65 per cent, were packed in the United States and Alaska; 2,035,637 cases, or 19 per cent, in British Columbia; 1,472,969 cases in Siberia; and 219,369 cases (estimated) in Japan. Compared with 1927, there was an increase of 36 per cent in the pack in the United States and Alaska, 50 per cent in British Columbia, and 80 per cent in Siberia.

Pack of canned salmon, Pacific Coast States and Alaska, 1928, standard cases

Products	Alaska							
	Southeastern		Central		Western		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*	*Cases*	*Value*
King, chinook, or spring:								
1-pound tall	2,301	$17,895	12,203	$97,976	13,019	$103,062	27,523	$218,933
1-pound flat	2,465	25,074	11,807	163,026	582	7,756	14,854	195,856
½-pound flat	756	10,636	11,026	177,383			11,782	188,019
Total	5,522	53,605	35,036	438,385	13,601	110,818	54,159	602,808
Red or sockeye:								
1-pound tall	65,326	606,538	331,083	3,032,788	1,375,522	12,468,807	1,771,931	16,108,133
1-pound flat	15,071	168,300	58,661	664,864	13,368	129,986	87,100	963,150
½-pound flat	26,401	361,576	40,828	592,858	21,834	308,075	89,063	1,262,509
Total	106,798	1,136,414	430,572	4,290,510	1,410,724	12,906,868	1,948,094	18,333,792
Coho or silver:								
1-pound tall	130,249	918,275	148,543	1,025,447	493	3,436	279,285	1,947,158
1-pound flat	5,840	44,864					5,840	44,864
½-pound flat	9,681	93,095	3,817	40,172			13,498	133,267
Total	145,770	1,056,234	152,360	1,065,619	493	3,436	298,623	2,125,289
Humpback or pink:								
1-pound tall	2,099,684	13,681,539	639,822	4,210,523	1,074	6,685	2,740,580	17,899,047
1-pound flat	6,189	43,051					6,189	43,051
½-pound flat	36,965	312,561	3,508	30,871			40,473	343,432
Total	2,142,838	14,037,451	643,330	4,241,394	1,074	6,685	2,787,242	18,285,530
Chum or keta:								
1-pound tall	565,252	3,261,527	377,763	2,445,373	47,709	289,936	990,724	5,996,836
1-pound flat	4	20					4	20
½-pound flat	4,963	38,834	94	776			5,057	39,610
Total	570,219	3,300,381	377,857	2,446,149	47,709	289,936	995,785	6,036,466
Grand total	2,971,147	19,584,035	1,639,155	12,482,057	1,473,601	13,317,743	6,083,903	45,383,885

Pack of canned salmon, Pacific Coast States and Alaska, 1928, standard cases—Con.

Products	United States						Grand total, Alaska and United States	
	Washington		Oregon and California		Total			
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*	*Cases*	*Value*
King, chinook, or spring:								
1-pound tall	13, 358	$109, 196	6, 955	$50, 035	20, 313	$159, 231	47, 836	$378, 164
1-pound oval	1, 614	37, 122	3, 338	76, 774	4, 952	113, 896	4, 952	113, 896
1-pound flat	19, 836	280, 929	47, 614	702, 895	67, 450	983, 824	82, 304	1, 179, 680
½-pound oval	219	4, 993	491	11, 195	710	16, 188	710	16, 188
½-pound flat	75, 580	1, 315, 796	113, 862	2, 056, 431	189, 442	3, 372, 227	201, 224	3, 560. 246
Total	110. 607	1, 748, 036	172, 260	2, 897, 330	282, 867	4, 645, 366	337, 026	5, 248, 174
Red or sockeye:								
1-pound tall	823	7, 736			823	7, 736	1, 772, 754	16, 115, 869
1-pound flat	15, 005	189, 063			15, 005	189, 063	102, 105	1, 152, 213
½-pound flat	54, 460	818, 374	2, 916	60, 653	57, 376	879, 027	146, 439	2, 141, 536
Total	70, 288	1, 015, 173	2, 916	60, 653	73, 204	1, 075, 826	2, 021, 298	19, 409, 618
Coho or silver:								
1-pound tall	40, 085	280, 595	2, 743	19, 138	42, 828	299, 733	322, 113	2, 246, 891
1-pound flat	35, 231	281, 848	13, 982	111, 856	49, 213	393, 704	55, 053	438, 568
½-pound flat	34, 708	374, 846	[1] 25, 388	276, 513	60, 096	651, 359	73, 594	784, 626
Total	110, 024	937, 289	42, 113	407, 507	152, 137	1, 344, 796	450, 760	3, 470, 085
Humpback or pink:								
1-pound tall	3, 716	24, 526			3, 716	24, 526	2, 744, 296	17, 923, 573
1-pound flat	28	196			28	196	6, 217	43, 247
½-pound flat	2, 357	20, 742			2, 357	20, 742	42, 830	364, 174
Total	6, 101	45, 464			6, 101	45, 464	2, 793, 343	18, 330, 994
Chum or keta:								
1-pound tall	177, 820	1, 060, 476	85, 405	478, 268	263, 225	1, 538, 744	1. 253, 949	7, 535, 580
1-pound flat	79	521	10, 222	67. 465	10, 301	67, 986	10, 305	68, 006
½-pound flat	15, 448	117, 404	20, 562	156, 271	36, 010	273, 675	41, 067	313, 285
Total	193, 347	1, 178, 401	116, 189	702, 004	309, 536	1, 880, 405	1, 305, 321	7, 916. 871
Steelhead:								
1-pound tall	13	109			13	109	13	109
1-pound oval	103	1, 442	21	294	124	1, 736	124	1, 736
1-pound flat	1, 276	14, 036	3, 282	36, 102	4, 558	50, 138	4, 558	50, 138
½-pound oval	1, 268	22, 824	1, 066	19, 188	2, 334	42, 012	2, 334	42, 012
½-pound flat	4, 373	61, 222	7, 656	107, 184	12, 029	168, 406	12, 029	168, 406
Total	7, 033	99, 633	12, 025	162, 768	19, 058	262, 401	19, 058	262, 401
Grand total	497, 400	5, 023, 996	345, 503	4, 230, 262	842, 903	9, 254, 258	6, 926, 806	54, 638, 143

[1] Includes a few cases packed in quarter-pound cans.

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of forty-eight 1-pound cans to the case.

Pack of canned salmon in the Pacific Coast States, 1921 to 1928

Year	King, chinook, or spring		Red or sockeye		Coho or silver		Humpback or pink	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	335, 854	$4, 527, 711	104, 954	$1, 905, 647	111, 643	$806, 678	402, 846	$1, 732, 847
1922	314, 126	4, 572, 607	97, 927	1, 816, 901	204, 252	1, 533, 173	3, 551	18, 546
1923	384, 705	5, 790, 419	105, 336	1, 955, 549	245, 548	1, 608, 627	445, 175	2, 211, 742
1924	349. 014	4, 599, 759	85, 800	1, 478, 698	231, 139	1, 774, 078	12, 778	79, 436
1925	432, 638	5, 990, 019	118, 387	2, 065, 975	307, 567	3, 313, 060	551, 375	3, 152, 342
1926	349. 600	5, 281, 404	75, 711	1, 474, 722	228, 141	2, 223, 499	2, 608	19, 609
1927	405, 319	6, 192, 368	123, 826	2, 170, 385	210, 537	2, 212, 763	586, 598	3, 865, 797
1928	282, 867	4, 645, 366	73, 204	1, 075, 826	152, 137	1, 344, 796	6, 101	45, 464

Year	Chum or keta		Steelhead		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	35, 132	$127, 659	12, 519	$133, 883	1, 002, 948	$9, 234, 425
1922	87, 583	365, 303	25, 797	326, 994	733, 246	8, 633, 524
1923	154, 342	769, 839	32, 157	324, 390	1, 367, 263	12, 660. 566
1924	247, 858	1, 192, 156	32, 073	270, 340	958, 662	9, 394, 467
1925	133, 368	641, 310	15, 278	217, 270	1, 558, 613	15, 379, 976
1926	148, 732	758, 843	30, 946	381, 225	835, 738	10, 139, 302
1927	145, 356	852, 120	32, 815	419, 064	1, 504, 451	15, 712, 497
1928	309, 536	1, 880, 405	19, 058	262, 401	842, 903	9, 254, 258

NOTE.—Shown in standard cases of forty-eight 1-pound cans.

Pack of canned salmon in Alaska, 1921 to 1928

Year	King, chinook, or spring		Red or sockeye		Coho or silver	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	44,994	$459,897	1,765,798	$15,841,404	106,555	$600,140
1922	30,660	247,673	2,070,658	19,135,696	175,993	962,790
1923	38,343	328,270	1,859,496	17,253,792	164,107	943,318
1924	33,648	299,009	1,447,895	13,803,932	183,601	1,254,551
1925	49,978	595,041	1,059,676	13,904,599	161,010	1,565,759
1926	52,476	544,246	2,157,087	21,328,739	202,527	1,700,563
1927	70,391	791,653	1,320,195	15,954,485	253,044	2,153,956
1928	54,159	602,808	1,948,094	18,333,792	298,623	2,125,289

Year	Humpback or pink		Chum or keta		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	423,984	$1,788,778	255,495	$942,525	2,596,826	$19,632,744
1922	1,658,423	7,189,494	565,918	2,251,540	4,501,652	29,787,193
1923	2,448,129	11,899,956	525,622	2,447,671	5,035,697	32,873,007
1924	2,601,283	12,837,346	1,028,488	4,812,297	5,294,915	33,007,135
1925	2,110,593	11,137,102	1,078,680	4,787,030	4,459,937	31,989,531
1926	3,338,349	17,987,527	902,443	4,518,929	6,652,882	46,080,004
1927	1,420,775	8,338,690	507,723	2,777,480	3,572,128	30,016,264
1928	2,787,242	18,285,530	995,785	6,036,466	6,083,903	45,383,885

NOTE.—Shown in standard cases of forty-eight 1-pound cans.

Pack of canned salmon in the United States and Alaska, 1921 to 1928

Year	Pacific Coast States		Alaska		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	1,002,948	$9,234,425	2,596,826	$19,632,744	3,599,774	$28,867,169
1922	733,246	8,633,524	4,501,652	29,787,193	5,234,898	38,420,717
1923	1,367,263	12,660,566	5,035,697	32,873,007	6,402,960	45,533,573
1924	958,662	9,394,467	5,294,915	33,007,135	6,253,577	42,401,602
1925	1,558,613	15,379,976	4,459,937	31,989,531	6,018,550	47,369,507
1926	835,738	10,139,302	6,652,882	46,080,004	7,488,620	56,219,306
1927	1,504,451	15,712,497	3,572,128	30,016,264	5,076,579	45,728,761
1928	842,903	9,254,258	6,083,903	45,383,885	6,926,806	54,638,143

NOTE.—Shown in standard cases of forty-eight 1-pound cans.

Sardines.—In 1928 packs of sardines were reported by 38 plants in Maine and 28 in California. This is an increase of one plant in Maine and a decrease of one in California, as compared with last year. There was also one plant operating in Massachusetts in 1927, which was inactive in 1928. The production of Maine sardines amounted to 2,055,763 standard cases of one hundred ¼-pound cans, valued at $8,076,546, which is an increase of 63 per cent in quantity and 54 per cent in value, as compared with the pack of the previous year. In California the production amounted to 2,771,527 standard cases of forty-eight 1-pound cans, valued at $9,658,822, which is an increase of 8 per cent in quantity and 4 per cent in value. The production in both Maine and California was far above the average for the period 1921 to 1927.

Pack of canned sardines, 1928

Sardines (herring)	Maine		Sardines (pilchard)	California	
	Cases	*Value*		*Cases*	*Value*
In olive oil: Quarters, ¼-pound (100 cans)	32,677	$192,754	½-pound oval (48 cans)[2]	44,468	$131,276
In cottonseed oil: Quarters, ¼-pound (100 cans)	1,683,895	6,682,194	1-pound oval (48 cans):		
In mustard:			In tomato sauce	2,374,227	7,939,509
Quarters, ¼-pound (100 cans)	135,708	604,781	In mustard	137,874	478,434
Three-quarters, ¾-pound (48 cans)	129,451	515,753	In cottonseed oil	4,365	14,063
In other sauces: Quarters, ¼-pound (100 cans)	[1] 17,073	81,064	In natural oil	14,530	46,806
			Soused	2,495	8,429
			In other sauces	7,148	24,183
			¼-pound square (100 cans):		
			In olive oil	26,194	247,983
			In other oils and sauces	6,606	42,544
			½-pound square (100 cans)	[3] 170,080	683,238
			1-pound tall (48 cans)	[4] 14,417	42,357
Total	1,998,804	8,076,546	Total	2,802,404	9,658,822
Total (standard cases)	2,055,763		Total (standard cases)	2,771,527	

[1] Principally in tomato sauce. Includes a few cases packed in half-pound oval cans, 100 to the case, which have been converted to the equivalent of quarter-size cans, 100 to the case.
[2] Principally in tomato sauce.
[3] Includes the pack in 8-ounce square cans, 48 to the case; 8-ounce glass jars, 24 to the case; and 6-ounce cans, 100 to the case, which have been converted to the equivalent of ½-pound cans, 100 to the case.
[4] Includes the pack in 102-ounce cans, 6 to the case, which have been converted to the equivalent of 1-pound cans, 48 to the case.

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of one hundred ¼-pound cans to the case of sardines (herring) and forty-eight 1-pound cans to the case of sardines (pilchard).

Pack of canned sardines, 1921 to 1928

Year	Maine and Massachusetts		California	
	Cases	*Value*	*Cases*	*Value*
1921	1,399,507	$3,960,916	398,668	$2,346,446
1922	1,869,719	5,750,109	715,364	3,361,480
1923	1,272,277	5,288,865	1,100,162	4,607,931
1924	1,899,925	7,191,026	1,367,139	5,445,573
1925	1,870,786	6,716,701	1,714,913	6,380,617
1926	1,717,537	6,727,388	2,093,278	7,807,404
1927	1,262,124	5,249,030	2,563,146	9,268,784
1928	[1] 2,055,763	8,076,546	2,771,527	9,658,822

[1] Maine only. None packed in Massachusetts.

NOTE.—Shown in standard cases of one hundred ¼-pound cans for Maine and Massachusetts and forty-eight 1 pound cans for California.

Tuna and tunalike fishes.—In 1928 these fishes were canned at 16 plants in California. This is a decrease of 3 plants, as compared with last year. The total production was 1,216,222 standard cases of forty-eight ½-pound cans, valued at $8,374,030. This is a decrease of 3 per cent in quantity and an increase of less than 1 per cent in value, as compared with the pack of the previous year. With the exception of that in 1927, the pack was larger than in any year during the period 1921 to 1927.

Pack of canned tuna and tunalike fishes in California, 1928

Sizes	Albacore		Yellowfin		Bluefin	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
¼-pound round (48 cans) [1]	14,280	$81,327	62,803	$275,879	28,337	$101,077
½-pound round (48 cans) [2]	71,744	744,615	431,356	3,018,250	78,690	471,221
1-pound round (48 cans) [3]	6,989	134,121	54,912	703,965	10,515	108,196
Flakes [4]	12,860	67,226	22,390	94,553	281	1,191
Total	105,873	1,027,289	571,461	4,092,647	117,823	681,685
Total (standard cases)	105,722		594,972		114,169	

Sizes	Striped		Mixed yellowfin and bluefin		"Tonno" [6]	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
¼-pound round (48 cans) [1]	32,648	$110,924	1,570	$6,672	210,950	$898,865
½-pound round (48 cans) [2]	145,985	795,934	23,542	153,023	19,588	154,121
1-pound round (48 cans) [3]	18,337	181,462	664	7,968	948	15,313
Flakes [4]	2,833	10,502	8,740	34,860		
Total	199,803	1,098,822	[5] 34,516	202,523	231,486	1,068,299
Total (standard cases)	201,816		34,395		126,959	

Sizes	Bonito		Yellowtail		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
¼-pound round (48 cans) [1]	2,507	$9,170	5,752	$21,332	358,847	$1,505,246
½-pound round (48 cans) [2]	18,442	94,164	5,871	32,947	795,218	5,464,275
1-pound round (48 cans) [3]	2,208	19,908	2,665	25,244	97,238	1,196,177
Flakes [4]					47,104	208,332
Total	23,157	123,242	14,288	79,523	1,298,407	8,374,030
Total (standard cases)	24,112		14,077		1,216,222	

[1] Includes the pack in ⅛-pound cans, 96 to the case, and ¼-pound cans, 100 to the case, which have been converted to the equivalent of ¼-pound round cans, 48 to the case.

[2] Includes the pack of ½-pound square cans, 48 to the case, and ½-pound cans, 50 to the case, which have been converted to the equivalent of ½-pound round cans, 48 to the case.

[3] Includes the pack of 4-pound cans, 12 to the case, which have been converted to the equivalent of 1-pound round cans, 48 to the case.

[4] Flakes have been converted to the equivalent of standard cases.

[5] Includes a few cases of mixed striped and yellowfin tuna.

[6] Manufactured chiefly from bluefin tuna.

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of forty-eight ½-pound cans to the case.

Pack of canned tuna and tunalike fishes, 1921 to 1928

Year	Albacore		Bluefin and yellowfin tuna		Striped tuna		"Tonno"	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	456,152	$2,657,266	64,816	$306,486	27,972	$109,929		
1922	296,210	2,304,935	168,874	1,047,621	177,995	942,356	13,714	$139,067
1923	310,037	3,106,329	261,773	1,959,812	96,452	578,254	124,416	1,136,814
1924	416,820	4,024,509	65,941	455,048	43,159	239,198	97,304	861,861
1925	[1] 518,079	4,412,655	261,482	1,745,338	168,177	997,697	131,159	1,212,024
1926 [2]	61,197	471,502	287,699	1,718,744	290,278	1,525,146	137,720	1,209,041
1927	131,157	1,118,985	533,691	3,594,195	414,314	2,362,587	116,335	979,860
1928	105,722	1,027,289	[3] 743,536	4,976,855	201,816	1,098,822	126,959	1,068,299

Year	Bonito		Yellowtail		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921			210	$945	549,150	$3,074,626
1922	10,810	$58,900	4,718	18,994	672,321	4,511,873
1923	15,099	77,906	10,059	55,645	817,836	6,914,760
1924	12,899	94,806	16,293	81,164	652,416	5,756,586
1925	10,090	61,207	13,484	70,159	1,102,471	8,499,080
1926	48,113	259,204	26,192	98,646	851,199	5,282,283
1927	18,587	111,253	41,734	201,347	1,255,818	8,368,227
1928	24,112	123,242	14,077	79,523	1,216,222	8,374,030

[1] Includes 27,489 cases of tuna flakes, valued at $120,637.

[2] Includes 25,353 cases of tuna flakes, valued at $102,129, which have been credited to the various species as packed.

[3] Includes a few cases of mixed striped and yellowfin tuna.

NOTE.—Shown in standard cases of forty-eight ½-pound cans.

Mackerel.—In 1928 mackerel were canned at 18 plants in California and 4 in Massachusetts. The present popularity of canned mackerel is evidenced by the production in 1928 of 398,903 standard cases of forty-eight 1-pound cans, valued at $1,714,020. This is by far the largest pack of mackerel on record. A considerable portion of the pack finds outlet in the export trade.

Pack of canned mackerel, 1928

Sizes	Massachusetts		California		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
8-ounce (24 cans)	3,103	$8,201			3,103	$8,201
8-ounce (48 cans)			[1] 7,799	$23,832	7,799	23,832
14-ounce (24 cans)	[2] 21,956	84,224			21,956	84,224
16-ounce (48 cans)			384,622	1,597,763	384,622	1,597,763
Total	25,059	92,425	392,421	1,621,595	417,480	1,714,020
Total (standard cases)	10,382		388,521		398,903	

[1] Includes a few cases packed in 4-ounce cans, 100 to the case, which have been converted to the equivalent of 8-ounce cans, 48 to the case.

[2] Includes a few cases packed in 16-ounce cans, 24 to the case, which have been converted to the equivalent of 14-ounce cans, 24 to the case.

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of forty-eight 1-pound cans to the case.

Alewife products.—In 1928 alewives and alewife roe were canned at 7 plants in Maryland, 19 in Virginia, and 2 in North Carolina, a total of 28 plants or 13 less than in 1927. Their output consisted of 50,674 standard cases of canned alewives, valued at $150,878, and 56,392 cases of alewife roe, valued at $288,592, a total of 107,066 standard cases of forty-eight 1-pound cans, valued at $439,470. Considering the total production, there was an increase of 61 per cent in quantity and 39 per cent in value as compared with the previous year. This is greater in both quantity and value than the production of any year from 1921 to 1927.

Pack of canned alewife products, 1928, standard cases

Products	Maryland		Virginia and North Carolina		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
Alewives	33,956	$97,523	16,718	$53,355	50,674	$150,878
Alewife roe	15,941	71,750	40,451	216,842	56,392	288,592
Total	49,897	169,273	57,169	270,197	107,066	439,470

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of forty-eight 1-pound cans to the case.

Pack of canned alewives and alewife roe, 1921 to 1928

Year	Alewives		Alewife roe		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	156	$813	20,304	$157,841	20,460	$158,654
1922	489	1,994	18,099	137,514	18,588	139,508
1923	537	1,915	20,404	169,435	20,941	171,350
1924	1,550	5,118	41,642	332,245	43,192	337,363
1925	4,449	15,045	35,183	240,461	39,632	255,506
1926	19,920	65,405	33,886	201,278	53,806	266,683
1927	21,327	64,577	45,168	252,120	66,495	316,697
1928	50,674	150,878	56,392	288,592	107,066	439,470

NOTE.—Shown in standard cases of forty-eight 1-pound cans.

Shrimp.—In 1928 shrimp were canned at 4 plants in South Carolina, 9 in Georgia, 9 in Florida, 4 in Alabama, 16 in Mississippi, 24 in Louisiana, and 5 in Texas, making a total of 71 plants, or 3 less than a year ago. Louisiana is by far the most important State in the production of canned shrimp. The total pack amounted to 851,831 standard cases of 48 No. 1 cans (5-ounce cans, dry pack, and 5¾-ounce cans, wet pack), valued at $5,181,547. This is a decrease of less than 1 per cent in quantity and 3 per cent in value, compared with the pack for 1927, but is still one of the largest packs during the period 1921 to 1928.

Pack of canned shrimp, 1928

STANDARD CASES

States	Dry pack (in tins)		Wet pack (in tins)		Wet pack (in glass)		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*	*Cases*	*Value*
South Carolina	3,603	$21,162	17,039	$89,591			20,642	$110,753
Georgia	30,074	184,671	61,858	349,211	2,871	$29,919	94,803	563,801
Florida	7,451	44,563	46,559	272,400	25,207	268,447	79,217	585,410
Alabama	51,911	311,267	15,117	89,811			67,028	401,078
Mississippi	54,429	302,681	52,259	291,863	3,228	32,406	109,916	626,950
Louisiana	220,690	1,336,208	217,113	1,256,811			437,803	2,593,019
Texas	6,685	39,315	26,144	156,719			32,829	196,034
Louisiana and Texas					9,593	104,502	9,593	104,502
Total	374,843	2,239,867	436,089	2,506,406	40,899	435,274	851,831	5,181,547

ACTUAL CASES

Sizes	Total		Sizes	Total	
	Cases	*Value*		*Cases*	*Value*
In tins, dry:			In glass, wet:		
No. 1, 4-ounce (4 dozen)	19,945	$88,534	5¼-ounce (2 dozen)	66,331	$323,287
No. 1, 4½-ounce (4 dozen)	11,750	66,169	6¼-ounce (2 dozen)	18,681	102,017
No. 1, 5-ounce (4 dozen)	305,825	1,787,426	Wet, other sizes, in tins and glass (standard cases)	2,117	15,557
No. 1½, 8¼-ounce (2 dozen)	49,517	286,368			
Other sizes (standard cases)	1,636	11,370	Total		5,181,547
In tins, wet:					
No. 1, 5¾-ounce (4 dozen)	430,965	2,472,699			
No. 1½, 9¾-ounce (2 dozen)	4,960	28,120			

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of 48 No. 1, 5-ounce cans to the case in the dry pack, and 48 No. 1, 5¾-ounce cans to the case in the wet pack.

Pack of canned shrimp, 1921 to 1928

Year	Cases	Value	Year	Cases	Value
1921	655,364	$3,804,781	1925	735,714	$3,782,819
1922	579,797	3,064,087	1926	732,365	4,122,092
1923	700,429	4,381,534	1927	852,764	5,321,652
1924	718,517	4,608,950	1928	851,831	5,181,547

NOTE.—Shown in standard cases of 48 No. 1 cans.

Oysters.—In 1928 oysters were canned at 3 plants in Maryland, 3 in North Carolina, 14 in South Carolina, 6 in Georgia, 6 in Florida, 4 in Alabama, 18 in Mississippi, 7 in Louisiana, and 1 in Texas—a total of 62 plants, or 7 more than in 1927. The output of these

plants amounted to 503,952 standard cases of forty-eight 5-ounce cans, valued at $2,760,576. This is an increase of 13 per cent in quantity and 17 per cent in value, as compared with the previous year, and is above the average for the period 1921 to 1927. Mississippi and South Carolina accounted for 67 per cent of the total value of the production.

Pack of canned oysters, 1928

STANDARD CASES

States	Cases	Value	States	Cases	Value
Maryland	37,892	$233,218	Alabama	32,978	$176,330
North Carolina	29,161	145,102	Mississippi	205,115	1,119,123
South Carolina	133,202	728,870	Louisiana and Texas	29,537	165,043
Georgia	22,100	119,730			
Florida	13,967	73,160	Total	503,952	2,760,576

ACTUAL CASES

Sizes	Cases	Value	Sizes	Cases	Value
4-ounce (4 dozen)	54,622	$271,114	10-ounce (2 dozen)	75,547	$403,307
5-ounce (4 dozen)	354,237	1,888,795	Other sizes (standard cases)	537	4,012
6-ounce (4 dozen)	7,154	60,681			
8-ounce (2 dozen)	26,685	132,667	Total		2,760,576

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of 48 No. 1 5-ounce cans to the case.

Pack of canned oysters, 1921 to 1928

Year	Cases	Value	Year	Cases	Value
1921	442,086	$2,179,271	1925	654,755	$3,721,159
1922	505,973	2,423,616	1926	413,834	2,026,569
1923	524,544	2,720,073	1927	447,297	2,367,949
1924	447,481	2,478,044	1928	503,952	2,760,576

NOTE.—Shown in standard cases of 48 No. 1 5-ounce cans to the case.

Clam products.—In 1928 razor-clam products were canned at 14 plants in Washington, 6 in Oregon, and 3 in Alaska; hard-clam products at 1 plant in Rhode Island, 1 in New Jersey, 1 in Georgia, 2 in Florida, and 3 in Washington; and soft-clam products at 21 plants in Maine and 2 in Massachusetts—a total of 54 plants. In standard cases of 48 No. 1 cans, the pack of whole and minced clams was as follows: Razor clams, 106,280 standard cases, valued at $936,394; hard clams, 32,675 cases, valued at $203,959; and soft clams, 74,545 cases, valued at $318,510. The combined pack, in standard cases, of other clam products derived from razor, hard, and soft clams (chowder, soup, bouillon, broth, and juice), amounted to 318,140 cases, valued at $1,164,735. The total pack of 531,640 standard cases, valued at $2,623,598 in 1928, represents an increase of 1 per cent in quantity and a decrease of 4 per cent in value when compared with the pack of the previous year.

Pack of canned clam products, 1928

Items and States	Cases	Value
Razor clams (Washington, Oregon, and Alaska):		
Whole—		
No. 1, 5-ounce (4 dozen)	3,643	$36,430
1-pound 8-ounce (4 dozen)	1,472	16,324
No. 2, 10-ounce (2 dozen)	352	3,016
Minced—		
½-pound flat, 4-ounce (4 dozen)	92,810	647,132
No. 1, 5-ounce (4 dozen)	22,415	207,626
No. 2, 10-ounce (2 dozen)	2,480	20,159
Other sizes (standard cases)	787	5,707
Total	123,959	936,394
Total (standard cases)	106,280	
Hard clams (Washington and Florida):		
Whole and minced—		
No. 1, 5-ounce (4 dozen)	8,159	66,863
1-pound, 8-ounce (4 dozen)	1,561	11,239
No. 2, 10-ounce (2 dozen)	13,544	84,488
No. 10, 52-ounce (½ dozen)	6,519	41,369
Total	29,783	203,959
Total (standard cases)	32,675	
Soft clams (Maine and Massachusetts):		
Whole—		
5-ounce (4 dozen)	45,825	204,683
8-ounce (4 dozen)	7,894	53,055
Soft clams (Maine and Massachusetts)—Continued.		
Whole—Continued.		
10-ounce (2 dozen)	12,009	$42,476
Other sizes (standard cases)	4,080	18,296
Total	69,808	318,510
Total (standard cases)	74,545	
Other hard, soft, and razor clam products (Maine, Massachusetts, Rhode Island, New Jersey, Georgia, Florida, Washington, and Oregon):		
Chowder and soup—		
No. 1, 10-ounce (4 dozen) [1]	161,883	613,684
No. 2, 20-ounce (2 dozen) [2]	56,527	224,560
No. 3, 33-ounce (2 dozen) [3]	39,592	206,314
No. 10, 102-ounce (½ dozen) [4]	4,424	15,380
Bouillon, broth, and juice—		
Miscellaneous sizes in tins and glass (standard cases)	28,771	104,797
Total	291,197	1,164,735
Total (standard cases)	318,140	
Grand total (standard cases)	531,640	2,623,598

[1] Includes the pack in 11-ounce cans, 48 to the case, and 10½-ounce cans, 24 and 48 to the case, which have been converted to the equivalent of 10-ounce cans, 48 to the case.

[2] Includes the pack in 19-ounce cans, 24 to the case, and 15-ounce cans, 24 to the case, which have been converted to the equivalent of 20-ounce cans, 24 to the case.

[3] Includes the pack in 32-ounce cans, 12 to the case, which have been converted to the equivalent of 33-ounce cans, 24 to the case.

[4] Includes the pack in 108-ounce cans, 6 to the case, which have been converted to the equivalent of 102-ounce cans, 6 to the case.

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of 48 No. 1, 5-ounce, cans to the case, for whole and minced clams; and 48 No. 1, 10-ounce, cans to the case, for other clam products.

Value of canned clams and clam products, 1921 to 1928

Year	Razor clams	Hard clams	Soft clams	Clam chowders, juices, etc.	Total
1921	$506,591	$138,699	$338,775	$182,442	$1,166,507
1922	876,364	201,270	327,287	311,444	1,716,365
1923	883,535	194,937	308,560	323,584	1,710,616
1924	863,126	271,911	459,882	566,470	2,161,389
1925	860,002	218,601	287,073	484,702	1,850,378
1926	795,256	191,044	279,996	738,354	2,004,650
1927	1,046,797	231,526	270,747	1,195,884	2,744,954
1928	936,394	203,959	318,510	1,164,735	2,623,598

Miscellaneous canned fishery products.—In addition to those products not tabulated separately, there were 266,270 standard cases of forty-eight 1-pound cans of various miscellaneous canned fishery products, valued at $2,405,103. Of these products, shad were canned at 18 plants, shad roe at 17 plants, miscellaneous fish, roe, caviar, and salmon eggs at 38 plants, crabs at 3 plants, and miscellaneous shellfish at 9 plants. Compared with the pack a year ago, the pack of shad and shad roe, which amounted to 27,577 standard cases, valued at $233,846, increased 124 per cent in quantity and 179 per

cent in value, and the pack of crabs, which amounted to 1,624 cases, valued at $44,536, increased 61 per cent in quantity and 65 per cent in value.

Pack of miscellaneous canned fishery products in the United States and Alaska, 1928, standard cases

Items	Cases	Value	Items	Cases	Value
Shad	23,447	$110,006	Crabs	1,624	$44,536
Shad roe	4,130	123,840	Other shellfish [1]	8,966	128,989
Other fish	210,231	1,729,014			
Roe and caviar	12,584	144,384	Total	266,270	2,405,103
Salmon eggs (for bait)	5,288	124,334			

[1] Includes canned terrapin products, turtle products, mussels, squid, scallops, abalone, and clam cakes.

NOTE.—"Standard cases" represent the various sized cases converted to the equivalent of forty-eight 1-pound cans to the case.

Pack of canned shad and shad roe, 1921 to 1928

Year	Shad		Shad roe		Total	
	Cases	*Value*	*Cases*	*Value*	*Cases*	*Value*
1921	641	$2,455	38	$142	679	$2,597
1922	1,781	9,961	292	8,517	2,073	18,478
1923	2,162	37,165	536	16,288	2,698	53,453
1924	6,470	20,461	1,164	72,932	7,634	93,393
1925	12,569	53,875	2,430	100,571	14,999	154,446
1926	14,275	63,334	1,121	39,422	15,396	102,756
1927	11,569	61,842	767	21,890	12,336	83,732
1928	23,447	110,006	4,130	123,840	27,577	233,846

NOTE.—Shown in standard cases of forty-eight 1-pound cans.

Value of canned crabs 1921 to 1928

Year	Value	Year	Value
1921	$115,800	1925	$52,499
1922	104,171	1926	25,222
1923	47,023	1927	26,988
1924	35,944	1928	44,536

BY-PRODUCTS

In 1928 the total value of by-products, including the products of the menhaden and whaling industries, amounted to $14,880,956. This is an increase over the previous year's value of 16 per cent. Considered by groups, scrap, meal, and bran were most important and accounted for 36 per cent of the total value. The fish and whale oil group follows, accounting for 35 per cent, while shell products ranked third, accounting for 16 per cent. The remainder of the value, or 13 per cent, was made up by liquid glue, herring skins and scales, isinglass, shark skins and fins, fish flour, agar, and kelp products.

Oils.—In 1928 the production of fish and marine-animal oils amounted to 12,145,577 gallons, valued at $5,149,618, which is an increase of 12 per cent in the amount and 5 per cent in value compared with the preceding year. Of the total production, 30 per cent consisted of menhaden oil, 23 per cent herring oil (from Maine and

Alaska herring and alewives), 31 per cent sardine or pilchard oil, 12 per cent whale and sperm oil, and 4 per cent other fish oils, including salmon, tuna, cod-liver, blackfish, porpoise, shark, lake-herring and trout, mackerel, and oil from miscellaneous fish cuttings and waste. The production and value in 1928 were greater than for any year for which there are records except 1925.

Production of miscellaneous by-products, 1928

Products	Atlantic and Gulf coast		Pacific coast (including Alaska)		Total	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Fish and whale scrap and meal:						
Dried, tons	15,053	$837,765	39,964	$2,451,119	55,017	$3,318,884
Crude or green, do	3,067	20,290			3,067	20,290
Shrimp bran, do	1,726	58,080			1,726	58,080
Oil:						
Salmon, gallons			171,590	64,930	171,590	64,930
Pilchard or sardine, do			3,825,786	1,621,531	3,825,786	1,621,531
Tuna, do			22,834	5,102	22,834	5,102
Herring, do	199,465	70,244	2,543,600	1,015,555	2,743,065	1,085,799
Whale, do			1,364,498	639,786	1,364,498	639,786
Sperm, do			93,750	36,748	93,750	36,748
Cod-liver, crude, do	267,882	212,036			267,882	212,036
Miscellaneous, do	[1] 26,371	11,684	44,232	16,626	70,603	28,310
Liquid glue, do	[2] 510,587	1,254,082			510,587	1,254,082
Miscellaneous by-products [3], pounds	4,866,488	254,667	2,598,000	381,022	7,464,488	635,689
Total		2,748,848		6,232,419		8,981,267

[1] Includes the production in Wisconsin and Indiana.
[2] Includes the production of 1 plant in California.
[3] Includes herring skins and scales, isinglass, shark skins and fins, fish flour, agar, and kelp.

NOTE.—The oils produced on the Pacific coast are reported in "trade" gallons (7½ pounds), and those produced on the Atlantic and Gulf coasts are reported in United States gallons (about 7.74 pounds).

Production of fish and marine-animal oils, 1921 to 1928

Year	Menhaden		Herring		Pilchard or sardine	
	Gallons	*Value*	*Gallons*	*Value*	*Gallons*	*Value*
1921	6,260,478	$1,719,892	112,838	$26,735	170,977	$35,760
1922	7,102,677	2,904,833	450,362	150,144	428,859	145,668
1923	7,461,365	3,316,277	945,424	384,053	966,247	424,103
1924	3,923,904	1,817,626	1,324,002	571,399	2,338,711	1,076,903
1925	6,023,108	3,001,106	2,442,527	1,034,071	3,120,048	1,568,753
1926	3,942,821	1,729,160	3,116,936	1,382,763	2,113,028	932,651
1927	3,957,068	1,716,474	2,291,687	960,250	2,514,562	1,116,725
1928	3,585,569	1,455,376	2,743,065	1,085,799	3,825,786	1,621,531

Year	Other fish oils		Whale and sperm		Total	
	Gallons	*Value*	*Gallons*	*Value*	*Gallons*	*Value*
1921	[1] 733,259	$201,516	[1] 168,729	$94,767	7,446,281	$2,078,670
1922	306,430	145,401	2,247,145	884,714	10,535,473	4,230,760
1923	443,935	187,877	1,556,830	791,884	11,373,801	5,104,194
1924	381,832	184,534	1,242,836	661,271	9,211,285	4,311,733
1925	480,195	211,250	1,221,198	685,011	13,287,076	6,500,191
1926	439,252	234,832	1,276,009	748,075	10,888,046	5,027,491
1927	579,396	355,607	1,531,400	755,965	10,874,113	4,905,021
1928	532,909	310,378	1,458,248	676,534	12,145,577	5,149,618

[1] Whale oil included with "Other fish oils" in 1921.

Scrap, meal, and bran.—In 1928 the production of fish and marine-animal scrap, meal, and bran amounted to 104,519 tons, valued at $5,382,143. This is an increase of 14 per cent in the amount and 25 per cent in the value, compared with the production for 1927. The

value in 1928 was greater than for any year during the period 1921 to 1927. Of the total production 24 per cent consisted of dried menhaden scrap and meal; 19 per cent, acidulated menhaden scrap; 52 per cent, miscellaneous dried scrap and meal (other than menhaden); 3 per cent, crude or green scrap; and 2 per cent, shrimp bran. All of the above groups increased over 1927, except dried menhaden scrap and meal, which showed a slight decline.

Production of fish and marine-animal meal and scrap, 1921 to 1928

Year	Dried menhaden scrap and meal		Acidulated menhaden scrap		Other dried scrap and meal	
	Tons	*Value*	*Tons*	*Value*	*Tons*	*Value*
1921	37,858	$1,380,455	44,804	$905,640	22,173	$1,232,906
1922	67,821	2,665,441	25,755	556,317	21,638	1,090,346
1923	43,452	2,029,406	44,935	1,064,870	22,636	1,257,098
1924	21,008	996,866	24,409	495,684	30,847	1,373,351
1925	30,167	1,519,458	41,463	1,102,051	39,566	1,981,038
1926	24,226	1,164,396	23,553	548,204	37,703	1,892,010
1927	26,417	1,406,915	19,984	566,590	42,078	2,293,919
1928	24,681	1,453,651	20,028	531,238	55,017	3,318,884

Year	Crude or green scrap		Shrimp bran		Total	
	Tons	*Value*	*Tons*	*Value*	*Tons*	*Value*
1921	1,810	$21,327	628	$16,814	107,273	$3,557,142
1922	390	9,175	562	15,398	116,166	4,336,677
1923	1,593	13,721	1,269	48,290	113,885	4,413,385
1924	4,097	15,217	936	31,580	81,297	2,912,698
1925	5,787	16,430	1,079	31,658	118,062	4,650,635
1926	6,456	12,692	1,036	33,775	92,974	3,651,077
1927	1,960	8,942	1,427	44,716	91,866	4,321,082
1928	3,067	20,290	1,726	58,080	104,519	5,382,143

Glue.—In 1928 liquid fish glue was manufactured at four plants in Massachusetts and one in California. The production amounted to 510,587 gallons, valued at $1,254,082. This is a decrease of less than 1 per cent in amount and an increase of 46 per cent in value compared with the previous year. The value in 1928 was larger than for any year during the period 1921 to 1927, while the production has remained fairly constant during these years.

Production of fish glue, 1921 to 1928

Year	Gallons	Value	Year	Gallons	Value
1921	347,048	$364,415	1925	510,816	$589,064
1922	323,003	278,424	1926	520,622	732,109
1923	465,814	680,054	1927	512,136	860,396
1924	502,940	550,391	1928	510,587	1,254,082

Oyster-shell products.—In 1928 oyster-shell products were manufactured at 2 plants in Rhode Island, 4 in New Jersey, 2 in Pennsylvania, 7 in Maryland, 7 in Virginia, 2 in North Carolina, 3 in South Carolina, 2 in Florida, 3 in Alabama, 5 in Mississippi, 5 in Louisiana, and 5 in Texas, making a total of 47 plants, or the same number as operated in 1927. These plants produced 237,305 tons of crushed oyster shell for poultry feed, valued at $2,155,985, and 68,708 tons of oyster-shell lime, valued at $303,439, making a total of 306,013 tons of crushed

oyster-shell products, valued at $2,459,424. Compared with the total production of these products in 1927, there was a decrease in quantity of 1 per cent and 5 per cent in value.

Louisiana, as in 1927, ranked as the most important State in the production of oyster-shell products and accounted for 44 per cent of the total production and 47 per cent of the total value. The shells in Louisiana are taken with large dredges, mainly from reefs containing deposits of many thousands of tons of dead oyster shells.

Whole and crushed oyster shells are often used for road-building purposes, although crushed shells are used mainly for poultry feed, and the shell dust resulting from the crushing operation is sold as lime.

Production of oyster-shell products, 1928

States	Crushed oyster shell for poultry feed		Oyster-shell lime		Total	
	Tons	*Value*	*Tons*	*Value*	*Tons*	*Value*
Rhode Island and Pennsylvania	6,326	$65,202	1,350	$6,113	7,676	$71,315
New Jersey	7,899	78,308	2,089	8,901	9,988	87,209
Maryland	43,755	375,466	21,092	57,758	64,847	433,224
Virginia	17,784	169,272	[1] 28,357	189,388	46,141	358,660
North Carolina and South Carolina	7,561	82,186	2,017	13,589	9,578	95,775
Florida and Alabama	12,053	102,424	2,425	8,425	14,478	110,849
Mississippi and Texas	18,573	156,508	1,248	1,873	19,821	158,381
Louisiana	123,354	1,126,619	10,130	17,392	133,484	1,144,011
Total	237,305	2,155,985	68,708	303,439	306,013	2,459,424

[1] Of this amount, 15,371 tons, valued at $126,844, were reported as "burned" lime.

Production of oyster-shell products, 1921 to 1928

Year	Crushed oyster shell for poultry feed		Oyster-shell lime		Total
	Tons	*Value*	*Tons*	*Value*	*Value*
1921	185,474	$1,759,120	73,764	$502,634	$2,261,754
1922	236,021	2,005,838	93,168	431,213	2,437,051
1923	224,983	1,986,249	83,808	372,286	2,358,535
1924	219,211	2,019,254	70,269	336,384	2,355,638
1925	226,971	2,075,057	67,818	303,261	2,378,318
1926	251,166	2,379,141	57,232	207,019	2,586,160
1927	249,959	2,332,065	60,560	268,985	2,601,050
1928	237,305	2,155,985	68,708	303,439	2,459,424

Menhaden industry.—In 1928 one menhaden factory was operated in Connecticut, 1 in New York, 2 in New Jersey, 3 in Delaware, 11 in Virginia, 12 in North Carolina, 1 in Georgia, and 3 in Florida, making a total of 34 factories, or 5 less than in 1927. These plants utilized 540,617,000 fish for the manufacture of 44,709 tons of scrap and meal, valued at $1,984,889, and 3,585,569 gallons of oil, valued at $1,455,376, making a total value for these products of $3,440,265. This is a decrease in total value of 7 per cent under the previous year and is considerably under the value of the production as recorded for 1922 and 1923.

Virginia, as in the previous year, ranked first in the menhaden industry and accounted for 31 per cent of the total value of all menhaden products, while North Carolina accounted for 27 per cent, Georgia and Florida 24 per cent, and Connecticut, New York, New Jersey, and Delaware the remainder, or 18 per cent.

Fish utilized and products of the menhaden industry, 1928

States	Quantity of menhaden utilized	Products				
		Scrap and meal		Oil		Total
	Number	*Tons*	*Value*	*Gallons*	*Value*	*Value*
Connecticut, New York, New Jersey, and Delaware	75, 595, 000	[1] 6, 593	$209, 749	1, 031, 965	$427, 829	$637, 578
Virginia	113, 687, 000	8, 294	531, 009	1, 308, 886	538, 806	1, 069, 815
North Carolina	170, 997, 000	[2] 15, 679	667, 256	633, 806	248, 897	916, 153
Georgia and Florida	180, 338, 000	14, 143	576, 875	610, 912	239, 844	816, 719
Total	[3] 540, 617, 000	[4] 44, 709	1, 984, 889	3, 585, 569	1, 455, 376	3, 440, 265

[1] Of this quanity, 820 tons, valued at $49,420, were reported as dry scrap, and 5,773 tons, valued at $160,329, as acidulated scrap.
[2] Of this quantity, 4,492 tons, valued at $240,355, were reported as dry scrap; 7,333 tons, valued at $186,476, as acidulated scrap; and 3,854 tons, valued at $240,425, as fish meal.
[3] 324,370,200 pounds.
[4] Of this quantity, 16,693 tons, valued at $970,109, were reported as dry scrap; 20,028 tons, valued at $531,238, as acidulated scrap; and 7,988 tons, valued at $483,542, as fish meal.

NOTE.—Menhaden oil is reported in United States gallons (about 7.74 pounds).

Products of the menhaden industry, 1921 to 1928

Year	Dried scrap and meal		Acidulated scrap		Oil		Total
	Tons	*Value*	*Tons*	*Value*	*Gallons*	*Value*	*Value*
1921	37, 858	$1, 380, 455	44, 804	$905, 640	6, 260, 478	$1, 719, 892	$4, 005, 987
1922	67, 821	2, 665, 441	25, 755	556, 317	7, 102, 677	2, 904, 833	6, 126, 591
1923	43, 452	2, 029, 406	44, 935	1, 064, 870	7, 461, 365	3, 316, 277	6, 410, 553
1924	21, 008	996, 866	24, 409	495, 684	3, 923, 904	1, 817, 626	3, 310, 176
1925	30, 167	1, 519, 458	41, 463	1, 102, 051	6, 023, 108	3, 001, 106	5, 622, 615
1926	24, 226	1, 164, 396	23, 553	548, 204	3, 942, 821	1, 729, 160	3, 441, 760
1927	26, 417	1, 406, 915	19, 984	566, 590	3, 957, 068	1, 716, 474	3, 689, 979
1928	24, 681	1, 453, 651	20, 028	531, 238	3, 585, 569	1, 455, 376	3, 440, 265

PACKAGED-FISH TRADE

Fresh and frozen packaged fishery products were prepared in 1928 at 5 plants in Maine, 45 in Massachusetts, 1 in Connecticut, 14 in New York, 9 in Virginia, 1 in North Carolina, 4 in Florida, 1 in Alabama, 1 in Pennsylvania, 3 in Washington, and 1 in Oregon, making a total of 85 plants. In addition, fish were packaged by fishermen in California, the number of whom was not determined. The production amounted to 65,245,376 pounds, valued at $9,790,024. It has been estimated that to produce this amount of packaged products 160,000,000 pounds of whole fish were utilized.

Haddock was by far the most important fish packaged, accounting for 87 per cent of the total products prepared. Following, in order, were cod with 3 per cent of the total, squeteague 2 per cent, hake 2 per cent, and croaker 1 per cent. About 17 other species were packaged in smaller quantities. Predominating among these were flounders (including sole), cusk, and halibut.

Massachusetts accounted for 65 per cent of the production; Connecticut and New York, combined, 28 per cent; Virginia and North Carolina, combined, 4 per cent; and Maine, 2 per cent. The remaining 1 per cent was packaged in the Gulf and Pacific Coast States.

Considered according to the method of preparation, fish fillets accounted for 89 per cent of the product, dressed fish 4 per cent, pandressed fish 3 per cent, fish sticks 3 per cent, and the remainder consisted of fish steaks and fish tenderloins.

Production of fresh and frozen packaged fish in the United States, 1928

Species	Maine		Massachusetts		Connecticut and New York	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod	313,800	$49,586	684,863	$96,183	[1] 1,057,581	$154,697
Cusk	213,400	34,158	268,250	32,758		
Flounders, including "sole"	8,400	1,428	258,812	108,838	182,000	36,400
Haddock	552,799	88,868	39,423,920	5,664,549	16,800,709	2,689,293
Hake	306,025	47,539	752,708	86,146	85,000	10,200
Mackerel			89,417	19,936		
Miscellaneous [2]			915,800	141,829		
Total	1,394,424	221,579	42,393,770	6,150,239	18,125,290	2,890,590

Species	Virginia and North Carolina		Florida, Alabama, and Pennsylvania		Washington, Oregon, and California		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod	(1)						2,056,244	$300,466
Croaker	786,069	$101,486					786,069	101,486
Cusk							481,650	66,916
Flounders, including "sole"	95,323	13,537					544,535	160,203
Grouper			41,500	$8,045			41,500	8,045
Haddock	281,465	48,285					57,058,893	8,490,995
Hake							1,143,733	143,885
Halibut					232,000	$46,400	232,000	46,400
Mackerel							89,417	19,936
Rockfish					125,000	30,000	125,000	30,000
Sablefish					8,000	960	8,000	960
Salmon					75,000	15,000	75,000	15,000
Sea bass					75,000	18,000	75,000	18,000
Snapper, red			58,000	12,600			58,000	12,600
Spot	12,000	2,130					12,000	2,130
Squeteague	1,293,835	163,441					1,293,835	163,441
Miscellaneous [2]	52,000	6,267	138,700	48,185	58,000	13,280	1,164,500	209,561
Total	2,520,692	335,146	238,200	68,830	573,000	123,640	[3] 65,245,376	9,790,024

[1] Cod packaged in Virginia is included with Connecticut and New York.
[2] Includes blue pike, butterfish, pollock, whiting, yellow perch, and other species.
[3] Of this amount 58,217,881 pounds, valued at $8,818,324, were fillets; 2,733,535 pounds, valued at $346,022, were dressed fish; 2,193,425 pounds, valued at $279,128, were pan-dressed fish; 1,717,035 pounds, valued at $269,515, were sticks; 333,000 pounds, valued at $65,960, were steaks; and 50,500 pounds, valued at $11,075, were tenderloins.

FROZEN-FISH TRADE

In 1928 there were 155 freezers and cold-storage warehouses in the United States and Alaska devoted wholly or in part to the storage of frozen and cured fishery products that reported their operations to the Government. This is six more than operated during 1927. Of the total, 23 were in New York, 20 in Ohio, 15 in Massachusetts, 12 in Pennsylvania, and 11 in Washington. The rest were in 21 other States and Alaska.

Fish, frozen.—In 1928 there were 113,637,898 pounds of fishery products frozen in the United States and Alaska. This is greater than the amount frozen in any previous year for which there are records, exceeding the amount frozen in 1925 by 25 per cent. Six species of fishery products constituted nearly one-half of the total amount of fish frozen. Listed in order of importance, these were salmon, which accounted for 13 per cent; halibut, 11 per cent; mackerel, 10 per cent; whiting, 9 per cent; and squid, 6 per cent. Other species of importance were sea herring, shellfish, and fishes in the groundfish group. During June, July, August, and November over one-half of the year's total was frozen. The amount frozen during June was largest, accounting for 16 per cent of the year's

total. August ranked second, accounting for 15 per cent; July third, with 14 per cent; and November fourth, with 12 per cent. Other months in which considerable quantities of fish were frozen were September, December, and October. As a general rule a comparatively small amount of fish is frozen from January to May, inclusive. The smallest number of pounds was frozen in April.

During 1928 about 64,000,000 pounds of halibut were caught by American and Canadian fishermen in the North Atlantic and Pacific oceans and landed at ports in these countries. During the same year about 17,000,000 pounds of halibut were frozen in Canada, the United States, and Alaska, or 27 per cent of the commercial catch.

Halibut is considered one of our most staple fish products and can be purchased in virtually every fish market in the United States. Undoubtedly this is due to the fact that stocks of halibut are put away in times when the catch exceeds market demand and then drawn upon when the catch is small, or during the closed season, as well as the fact that halibut is a most palatable fish.

A condition similar to that in the halibut fishery exists with mackerel, although the merits of this fish when frozen have not been learned to as great extent as with halibut, and therefore distribution is confined largely to our Eastern States. In 1928, 31,000,000 pounds of mackerel were taken by American fishing vessels along our North Atlantic coast and landed at American ports. In addition, it is estimated that the catch along the California coast by American vessels amounted to about 30,000,000 pounds, of which about 25,000,000 pounds were canned. During 1928 about 12,000,000 pounds of mackerel were frozen, or about 20 per cent of the catch by American vessels.

In 1928 about 287,000,000 pounds of ground fish (cod, haddock, hake, pollock, and cusk), were landed fresh at Boston and Gloucester, Mass., Portland, Me., New York City, and Groton, Conn., of which about 205,000,000 pounds were haddock. While this does not represent the entire catch of these fish during the year, it is believed that it represents a goodly portion of the total catch by American fishermen in North Atlantic waters. From these landings are selected nearly all of the fish of these species that are frozen and held in cold-storage warehouses in the United States, the amount of which during 1928 amounted to nearly 5,000,000 pounds. This figure does not represent the entire amount of ground fish frozen during 1928, for it must be borne in mind that our figures are mainly for the public freezers and cold-storage warehouses. During late years an increasing number of establishments have been preparing frozen package fishery products, and usually these firms operate a private freezer and cold-storage warehouse. The stocks of most of these products are held in private warehouses and do not enter into our statistics of the holdings unless they are later stored in a public warehouse. In considering the duplication that might occur in discussing the amount of ground fish frozen, it is estimated that about 35,000,000 pounds of ground fish, in the landed weight, were used in 1928 in preparing products that were later frozen, or about 12 per cent of the ground fish landed at the important North Atlantic ports. From this it readily can be seen that only a fraction of the catch of ground fish is now being frozen. With the more general adaptation of rapid freezing methods, which are recognized to pro-

duce a superior frozen fishery product, and greater consideration of the scheme of marketing frozen fish products it is believed that in a few years a larger proportion of the catch of ground fish will enter the trade in a frozen condition.

The Pacific section, including Washington, Oregon, California, and Alaska, was most important in the frozen-fish trade in 1928. There, 32,718,000 pounds of fish, or 29 per cent of the total, were frozen, consisting almost entirely of salmon and halibut, although there was a considerable quantity of sablefish and sea herring. The New England section, comprising the States in that area, ranked second in importance, 30,802,000 pounds of fish, or 27 per cent of the total, being frozen there, consisting largely of mackerel and whiting, although considerable quantities of squid, groundfish, and sea herring also were frozen. Third in importance was the Middle Atlantic section, which includes the States of New York, New Jersey, and Pennsylvania. There, 28,909,000 pounds of fish, or 25 per cent of the total, were frozen. Virtually every species of fish frozen in the United States was frozen in this section in 1928, although whiting, mackerel, squid, weakfish, and shellfish made up a large portion of the amount frozen. The North Central-East section, including some States bordering on the Great Lakes, ranked fourth. There, 11,494,000 pounds of fish, or 10 per cent of the total, were frozen, the important species being lake trout, species of shellfish shipped from the seacoast, ciscoes, and whitefish. The South Atlantic, North Central-West, and South Central sections ranked in the order named and accounted for the remaining quantities frozen.

In the Pacific section most of the fish were frozen from June to November, inclusive; in the New England section during June, July, and August; and in the Middle Atlantic section during June, July, and August, a considerable quantity being frozen in November and December. In the other sections there was a tendency to freeze most of the fish during the summer and fall.

Fish frozen, 1928

BY SPECIES AND MONTHS

Species	Month ended—						
	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Bluefish (all trade sizes)	9,113	1,623	2,896	1,348	365	65,108	88,444
Butterfish (all trade sizes)	43	7,019	14,464		28,280	270,543	122,975
Catfish	17,184	25,505	6,389	21,655	33,376	57,667	36,673
Cisco (Lake Erie)	5,424		69,587		45,328	43,786	55,988
Cisco (lake herring), including bluefin, blackfin, and chub	76,564	39,961	33,578	6,518	12,895	130,381	93,946
Cisco (tullibees, Canadian lakes)	44,274	46,070	228,312	56,777	11,052	13,266	13,811
Cod, haddock, hake, pollock	195,102	60,733	104,144	353,085	297,918	386,542	252,066
Croaker	4,644		5,591	8,277	384,834	478,355	261,126
Flounders	23,137	46,225	23,190	135,635	295,711	384,546	91,747
Halibut (all trade sizes)	153,607	12,172	1,645,223	699,652	1,175,072	1,842,628	1,668,461
Herring, sea (including alewives and bluebacks)	603,295	723,234	754,279	97,469	242,281	107,496	153,221
Lake trout	12,772	12,387	26,706	3,416	34,259	135,431	77,433
Mackerel (except Spanish)	58,026	74,632	54,742	62,887	192,324	4,180,421	3,719,118
Pike, blue and sauger	693			3,415	6,915	298,483	392,913
Pike, yellow or wall-eyed		16,711	72,268		7,631	3,531	24,220
Pike (including pickerel, jacks, and yellow jack)	157,311	51,462	60,143	2,839	2,954	99,088	36,744

Fish frozen, 1928—Continued

BY SPECIES AND MONTHS—Continued

Species	Month ended—						
	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Sablefish (black cod)	31,412	33,335	24,283	17,643	37,547	91,033	121,646
Salmon, chinook	2,240	1,000	1,656	52,565	43,270	149,390	426,723
Salmon, silver	1,692	119,007	91,253	7,728	4,566	71,641	483,717
Salmon, fall and pink	42,074	40,429	34,141	10,584	9,536	55,919	110,624
Salmon, steelhead trout	1,021	1,264	6,171		11,129	14,983	296,816
Salmon, all other	13,614	30,622	51,528	25,233	89,985	204,604	356,924
Scup (porgies)			92		86,941	478,886	444,452
Shad and shad roe	965	1,590	51,587	7,217	77,459	168,940	92,457
Shellfish	232,821	650,672	142,082	162,705	167,912	359,403	157,652
Smelts, eulachon, etc	9,750	7,211	408,873	7,763	1,505	4,467	510
Squid	3,918		780		860,947	3,631,697	1,279,855
Sturgeon and spoonbill cat	3,617	2,305	25,108	3,040	57,644	86,963	54,357
Suckers	15,208	15,986	3,910	230	9,129	47,852	20,487
Weakfish (including southern "sea trout")	2,896	2,519	1,669		104,201	396,444	159,552
Whitefish	52,022	17,754	95,913	24,687	4,524	150,400	225,894
Whiting	68,050	200	246	830	85,474	2,651,355	3,620,703
Miscellaneous frozen fish	506,413	807,837	500,667	429,047	1,095,310	1,354,212	1,104,461
Total	2,348,902	2,849,465	4,541,471	2,202,245	5,518,274	18,415,461	16,045,716

Species	Month ended—					Total	Per cent of total
	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15		
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	
Bluefish (all trade sizes)	219,945	133,937	69,470	59,074	36,643	687,966	0.6
Butterfish (all trade sizes)	241,542	395,012	142,992	245,283	9,252	1,477,405	1.3
Catfish	48,988	64,113	48,691	42,732	54,693	457,666	.4
Cisco (Lake Erie)	135,132	146,742	89,353	45,119	8,996	645,455	.6
Cisco (lake herring), including blue-fin, blackfin, and chub	106,280	41,480	67,098	560,188	892,263	2,061,152	1.8
Cisco (tullibees, Canadian lakes)	10,697	42,520	56,035	606,253	174,342	1,303,409	1.2
Cod, haddock, hake, pollock	814,917	799,366	864,572	339,877	385,895	4,854,217	4.3
Croaker	444,477	58,824	77,472	24,955	5,899	1,754,454	1.5
Flounders	112,729	78,591	73,266	107,710	92,736	1,465,223	1.3
Hulibut (all trade sizes)	2,433,597	1,215,906	326,027	426,403	926,697	12,525,445	11.0
Herring, sea (including alewives and bluebacks)	669,693	460,993	880,395	791,337	668,551	6,152,244	5.4
Lake trout	160,129	182,699	212,653	935,860	743,436	2,537,181	2.2
Mackerel (except Spanish)	1,170,911	978,740	400,651	461,952	196,450	11,550,854	10.2
Pike, blue and sauger	16,924	13,033	206,889	468,789	381,602	1,789,656	1.6
Pike, yellow or wall-eyed	6,395	73,596	25,278	114,712	4,770	349,112	.3
Pike (including pickerel, jacks, and yellow jack)	63,453	80,379	83,025	144,063	93,419	874,880	.8
Sablefish (black cod)	252,768	424,366	476,010	463,312	133,059	2,106,414	1.9
Salmon, chinook	242,030	359,001	259,554	9,146	142,464	1,689,039	1.5
Salmon, silver	1,689,003	1,523,104	1,158,106	771,480	146,001	6,067,298	5.3
Salmon, fall and pink	964,551	73,077	390,926	718,564	88,265	2,538,690	2.2
Salmon, steelhead trout	194,225	265,544	136,159	30,549	179,886	1,137,747	1.0
Salmon, all other	757,618	1,108,626	233,881	158,304	181,072	3,212,011	2.8
Scup (porgies)	183,200	14,793	5,683	1,613	3,125	1,218,785	1.1
Shad and shad roe	101,725	79,032	675	19,915	2,889	604,451	.5
Shellfish	229,106	502,534	870,563	1,509,811	1,110,770	6,096,031	5.4
Smelts, eulachon, etc	2,637	16,731	50,765	142,661	95,878	748,751	.7
Squid	636,023	227,822	130,998	3,881	25,278	6,801,199	6.0
Sturgeon and spoonbill cat	67,106	48,383	76,470	51,154	50,953	527,100	.5
Suckers	6,847	2,286	10,562	26,926	5,394	164,817	.1
Weakfish (including southern "sea trout")	827,319	252,879	307,267	1,018,201	149,035	3,221,982	2.8
Whitefish	81,178	86,114	38,982	398,696	440,039	1,616,203	1.4
Whiting	2,164,510	143,954	108,412	654,285	1,016,667	10,514,686	9.2
Miscellaneous frozen fish	2,074,302	1,368,587	1,494,443	2,050,020	2,101,076	14,886,375	13.1
Total	17,129,957	11,262,764	9,373,323	13,402,825	10,547,495	113,637,898	100.0

Fish frozen, 1928—Continued

BY GEOGRAPHICAL SECTIONS [1]

[Expressed in thousands of pounds; that is, 000 omitted]

Species	New England	Middle Atlantic	South Atlantic	North Central East	North Central West	South Central	Pacific	Total
Bluefish (all trade sizes)	18	528	2	132	8			688
Butterfish (all trade sizes)	189	1,103	177	8				1,477
Catfish	22	25	7	185	181	37		457
Cisco (Lake Erie)		645						645
Cisco (lake herring), including blue-fin, blackfin, and chub		188		1,161	710	1		2,060
Cisco (tullibees, Canadian lakes)	34	903	4	191	171			1,303
Cod, haddock, hake, pollock	3,336	918	5	80	271	30	215	4,855
Croaker	1	784	809	161				1,755
Flounders	521	904		7			33	1,465
Halibut (all trade sizes)	301	674		657	65	1	10,828	12,526
Herring, sea (including alewives and bluebacks)	3,098	375	1	453	184		2,042	6,153
Lake trout	1	438		1,822	276			2,537
Mackerel (except Spanish)	7,910	3,050	7	93	33		456	11,549
Pike, blue and sauger		1,079		702	3	6		1,790
Pike, yellow or wall-eyed		166		158	25			349
Pike (including pickerel, jacks, and yellow jack)		61	8	662	143			874
Sablefish (black cod)		1		3	44		2,059	2,107
Salmon, chinook	6	35		34	20		1,595	1,690
Salmon, silver	55	331		18	8		5,656	6,068
Salmon, fall and pink	3	132	4	64	13		2,322	2,538
Salmon, steelhead trout	1	6					1,131	1,138
Salmon, all other	53	295		145	39		2,681	3,213
Scup (porgies)	193	1,022		1	3			1,219
Shad and shad roe	125	282	18	75	3		101	604
Shellfish	487	2,294	897	1,391	265	2	760	6,096
Smelts, eulachon, etc	44	593		6	4		102	749
Squid	4,136	2,639		14	12			6,801
Sturgeon and spoonbill cat		319	26	15	22	38	108	528
Suckers		3		161	1			165
Weakfish (including southern "sea trout")	1	2,570	649	2				3,222
Whitefish		710		826	80			1,616
Whiting	7,296	3,104	2	4	109			10,515
Miscellaneous frozen fish	2,971	2,732	1,939	2,263	1,208	1,144	2,629	14,886
Total	30,802	28,909	4,555	11,494	3,901	1,259	32,718	113,638

[1] New England includes the six States of that section; Middle Atlantic—New York, New Jersey, and Pennsylvania; South Atlantic—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida; North Central East—Ohio, Indiana, Illinois, Michigan, and Wisconsin; North Central West—Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South Central—Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas.

Fish frozen monthly, 1928

BY GEOGRAPHICAL SECTIONS [1]

[Expressed in thousands of pounds; that is, 000 omitted]

Month ended the 15th of—	New England	Middle Atlantic	South Atlantic	North Central East	North Central West	South Central	Pacific	Total
January	178	256	63	397	326	65	1,064	2,349
February	83	544	81	319	186	120	1,516	2,849
March	92	1,411	27	220	113	112	2,567	4,542
April	414	213	40	177	233	110	1,015	2,202
May	1,377	1,559	190	365	145	115	1,767	5,518
June	6,825	6,755	562	1,249	346	104	2,634	18,415
July	8,103	3,096	339	793	296	87	3,332	16,046
August	5,923	2,517	1,262	659	243	65	6,461	17,130
September	2,887	2,066	215	803	242	116	4,934	11,263
October	2,206	2,337	263	1,068	311	100	3,088	9,373
November	1,670	4,887	500	2,800	755	153	2,638	13,403
December	1,044	3,268	1,073	2,644	705	112	1,702	10,548
Total	30,802	28,909	4,555	11,494	3,901	1,259	32,718	113,638

[1] New England includes the six States of that section; Middle Atlantic—New York, New Jersey, and Pennsylvania; South Atlantic—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida; North Central East—Ohio, Indiana, Illinois, Michigan, and Wisconsin; North Central West—Minnesota, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South Central—Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas.

Fish frozen in various years, 1920 to 1928

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Month ended—						
	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15	July 15
1920	2,291	2,274	2,630	2,465	3,688	10,094	12,762
1921	4,005	2,843	1,770	2,413	2,698	9,624	10,151
1922	2,442	1,453	1,364	1,497	1,980	5,850	7,376
1923	2,742	1,662	1,412	1,400	5,027	7,671	11,872
1924	3,179	2,440	2,417	2,729	6,040	8,282	11,996
1925	3,933	2,193	3,488	4,315	5,857	10,800	11,221
1928	2,349	2,849	4,542	2,202	5,518	18,415	16,046

Year	Month ended—					Total
	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15	
1920	13,620	11,804	11,169	9,712	9,751	92,260
1921	9,845	9,356	9,990	9,869	8,173	80,737
1922	9,121	10,827	16,830	9,344	7,070	75,154
1923	13,944	16,417	12,512	6,952	9,938	91,549
1924	15,542	10,585	14,878	10,855	8,381	97,324
1925	10,902	11,595	8,593	11,718	6,550	91,165
1928	17,130	11,263	9,373	13,403	10,548	113,638

Holdings of frozen fish.—That frozen fish is continuing to find favor with the consumers is indicated not only by the fact that in 1928 the amount of fish frozen increased over previous years, but also that the average monthly holdings of frozen fish in 1928 showed an increase of 10 per cent over the average monthly holdings during 1927 and 22 per cent over the 5-year average of monthly holdings. Holdings can not be correlated directly with the amount of fish frozen, due to the fact that we import fish frozen in Canada and Mexico and certain other countries. Compared with the 5-year average, the monthly holdings during 1928 showed an increase every month ranging between 7 and 41 per cent. When compared with the monthly holdings in 1927, increases are noted during 8 months, ranging from 6 to 26 per cent, while decreases are noted during 4 months ranging from 1 to 11 per cent. Total monthly holdings from August to December, inclusive, were largest, being in many instances, double the holdings for certain months during the period January to July, inclusive. Most fish were held in cold storage during December, while the least amount was held during April. This is correlated with the amounts frozen, in that there is an accumulation of stocks during the summer, when most fishing is done, and stocks are then carried over the winter, when there is little fishing, reaching a low ebb just at the beginning of the spring fishing season.

It is interesting to note that when the halibut season opened on February 15, 1928, the frozen halibut on hand amounted to 6,000,000 pounds. Stocks became depleted during the following two months, but soon began to exceed the holdings at the beginning of the season, until a peak of over 12,000,000 pounds was reported on hand on September 15. At the beginning of the mackerel season in April, about 600,000 pounds of frozen mackerel were in cold storage. Monthly holdings then increased in proportion to the fishing effort, and by October 15 around 10,000,000 pounds were in cold storage, which was the largest amount on hand during any month of the year.

As a general rule the monthly holdings of fish in the Pacific section are greatest, with average monthly holdings of 15,000,000 pounds. Those in the New England and Middle Atlantic section are usually about equal, with average monthly holdings of about 13,000,000 pounds. The average monthly holdings in the other sections vary between 500,000 pounds and 6,600,000 pounds.

Holdings of frozen fish, 1928

BY SPECIES AND MONTHS

Species	Month ended—					
	Jan. 15	Feb. 15	Mar. 15	Apr. 15	May 15	June 15
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Bluefish (all trade sizes)	274,188	237,013	225,503	194,040	161,473	224,992
Butterfish (all trade sizes)	317,642	188,536	105,777	68,790	46,321	160,026
Catfish	328,324	295,977	182,541	146,542	151,765	175,995
Cisco (Lake Erie)	652,002	611,725	556,437	499,879	329,540	182,279
Cisco (lake herring), including bluefin, blackfin, and chub	2,976,948	2,440,013	1,502,002	1,014,624	734,435	754,300
Cisco (tullibees, Canadian lakes)	1,957,972	2,487,214	2,154,696	1,997,939	1,765,863	1,635,092
Cod, haddock, hake, pollock	1,359,711	871,338	652,814	841,025	1,187,508	1,522,183
Croaker	785,741	506,914	132,455	61,649	319,406	715,183
Flounders	520,953	384,610	252,503	325,444	581,199	938,557
Halibut (all trade sizes)	9,583,813	6,192,879	5,339,759	4,741,243	5,657,154	7,296,244
Herring, sea (including alewives and bluebacks)	3,959,495	4,084,577	4,522,840	3,887,422	3,738,620	3,256,226
Lake trout	1,565,226	1,147,995	666,221	410,085	369,846	470,225
Mackerel (except Spanish)	2,653,597	1,776,842	937,062	573,486	617,520	4,699,633
Pike, blue and sauger	419,791	300,513	175,331	68,757	36,642	387,206
Pike, yellow or wall-eyed	412,669	462,690	317,631	108,619	57,017	48,676
Pike (including pickerel, jacks, and yellow jack)	1,024,084	974,608	691,831	544,631	431,120	454,561
Sablefish (black cod)	2,230,031	1,856,687	1,600,594	1,179,101	1,043,911	1,032,921
Salmon, chinook	1,231,806	881,929	558,245	208,935	83,791	154,795
Salmon, silver	2,753,845	2,170,446	1,373,362	690,124	440,553	355,459
Salmon, fall and pink	942,071	713,128	512,967	298,298	235,619	262,911
Salmon, steelhead trout	313,542	242,716	84,203	26,402	31,323	42,961
Salmon, all other	1,694,246	1,235,645	528,945	356,578	334,841	402,628
Scup (porgies)	292,435	201,974	103,099	75,158	123,927	552,462
Shad and shad roe	390,439	404,781	349,992	325,042	397,782	511,727
Shellfish	1,967,027	2,330,211	1,988,630	1,453,044	997,234	990,129
Smelts, eulachon, etc	397,813	1,022,302	1,253,091	710,713	446,712	426,497
Squid	1,133,430	780,355	440,490	137,520	936,805	4,365,664
Sturgeon and spoonbill cat	1,311,514	1,213,367	1,051,954	919,222	764,545	723,428
Suckers	89,816	70,446	38,271	35,147	36,533	84,026
Weakfish (including southern "sea trout")	798,647	451,279	79,092	56,265	144,664	528,276
Whitefish	1,125,698	1,398,434	1,100,572	576,908	358,224	412,168
Whiting	2,939,972	1,796,210	1,210,760	695,863	469,031	2,752,386
Miscellaneous frozen fish	5,516,946	5,143,917	3,838,760	3,244,571	3,481,922	4,425,995
Total	53,921,434	44,877,271	34,528,430	26,473,066	26,512,846	40,945,811

Species	Month ended—					
	July 15	Aug. 15	Sept. 15	Oct. 15	Nov. 15	Dec. 15
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Bluefish (all trade sizes)	238,423	485,861	620,735	626,926	635,889	704,343
Butterfish (all trade sizes)	260,349	480,684	832,267	894,436	1,037,203	937,765
Catfish	186,134	195,809	246,080	222,857	217,676	256,436
Cisco (Lake Erie)	117,994	169,769	140,962	138,113	91,507	107,390
Cisco (lake herring) including bluefin, blackfin, and chub	755,215	920,032	1,200,432	1,223,675	1,467,007	2,100,890
Cisco (tullibees, Canadian lakes)	1,571,604	1,546,981	1,516,917	1,298,849	1,336,219	1,836,333
Cod, haddock, hake, pollock	1,673,334	2,377,954	3,048,889	3,555,798	3,332,405	3,381,568
Croaker	923,484	1,361,795	1,024,761	680,725	565,186	655,703
Flounders	916,505	931,719	941,200	948,984	966,451	1,123,599
Halibut (all trade sizes)	8,850,463	11,283,675	12,364,310	11,561,041	10,456,365	8,959,729
Herring, sea (including alewives and bluebacks)	2,860,245	3,093,442	2,548,074	2,520,471	2,766,530	2,907,567
Lake trout	563,809	824,320	920,643	1,086,364	1,749,869	2,326,441
Mackerel (except Spanish)	8,266,436	9,069,879	9,555,422	9,652,318	8,959,192	8,731,653
Pike, blue and sauger	832,839	720,738	626,280	787,797	1,309,377	1,364,232
Pike, yellow or wall-eyed	89,826	34,560	87,673	100,130	261,788	204,304
Pike (including pickerel, jacks, and yellow jack)	450,102	453,194	442,574	494,051	815,229	759,063
Sablefish (black cod)	1,074,179	1,302,787	1,632,623	2,200,457	2,399,428	2,257,771
Salmon, chinook	496,621	775,064	1,128,489	1,395,300	1,443,182	1,229,967
Salmon, silver	785,548	2,280,331	3,889,632	5,105,003	5,617,904	4,992,785
Salmon, fall and pink	346,579	1,253,393	1,310,857	1,703,953	2,447,378	2,057,236
Salmon, steelhead trout	300,661	202,669	366,669	354,447	300,519	329,324
Salmon, all other	664,463	1,098,361	1,836,218	1,578,370	1,788,143	1,519,041
Scup (porgies)	919,563	971,416	935,230	867,991	821,024	735,976
Shad and shad roe	528,479	562,613	615,587	593,320	543,217	534,747
Shellfish	706,760	697,324	1,020,177	1,578,603	2,559,593	3,223,275
Smelts, eulachon, etc	403,161	388,184	391,748	415,991	454,176	471,615
Squid	5,186,704	5,605,685	5,352,324	5,058,962	4,646,042	3,968,837
Sturgeon and spoonbill cat	809,007	785,777	735,486	906,919	938,456	835,847
Suckers	102,967	107,141	100,011	102,993	108,609	94,430
Weakfish (including southern "sea trout")	654,374	1,417,865	1,606,649	1,790,957	2,733,871	2,663,911
Whitefish	627,953	673,280	602,340	511,441	887,564	1,284,433
Whiting	6,011,759	7,656,278	6,756,377	6,336,805	6,365,056	6,576,987
Miscellaneous frozen fish	4,964,473	6,441,639	6,954,158	7,116,234	7,655,277	8,951,834
Total	53,140,043	66,170,219	71,351,794	73,410,281	77,677,332	78,090,034

Monthly holdings of frozen fish for 1928 and 1927, and the 5-year average, compared

[Expressed in thousands of pounds; that is, 000 omitted]

Month ended the 15th of—	1928	1927	5-year average	Increase (+) or decrease (−) Compared with 1927	Increase (+) or decrease (−) Compared with 5-year average
				Per cent	*Per cent*
January	53,921	58,655	50,959	−8	+6
February	44,877	48,684	39,516	−8	+14
March	34,528	34,889	27,191	−1	+27
April	26,473	24,732	19,079	+7	+39
May	26,513	29,781	21,884	−11	+21
June	40,946	36,694	28,982	+12	+41
July	53,140	42,116	38,294	+26	+39
August	66,170	54,063	49,459	+22	+34
September	71,352	60,328	58,052	+18	+23
October	73,410	65,958	64,853	+11	+13
November	77,677	66,791	67,510	+16	+15
December	78,090	64,788	65,061	+20	+20
Average	53,925	48,957	44,237	+10	+22

Monthly holdings of frozen fish, 1928

[Expressed in thousands of pounds; that is, 000 omitted]

BY GEOGRAPHICAL SECTIONS [1]

Month ended the 15th of—	New England	Middle Atlantic	South Atlantic	North Central East	North Central West	South Central	Pacific [2]	Total
January	9,017	13,371	1,884	10,453	3,815	539	14,842	53,921
February	5,647	12,479	1,389	9,681	4,176	549	10,956	44,877
March	3,685	9,577	554	6,753	3,729	451	9,779	34,528
April	2,496	7,341	358	4,430	3,171	374	8,303	26,473
May	3,257	6,876	369	3,750	2,760	403	9,098	26,513
June	9,519	11,887	801	4,597	2,813	464	10,865	40,946
July	16,938	13,605	1,070	4,871	3,011	513	13,132	53,140
August	21,856	14,796	2,276	5,344	3,080	481	18,337	66,170
September	22,925	15,143	2,153	5,455	3,166	476	22,034	71,352
October	23,044	15,942	2,000	5,972	3,163	432	22,857	73,410
November	21,493	18,961	2,201	7,386	4,264	582	22,790	77,677
December	19,460	21,363	3,174	11,241	4,411	663	17,778	78,090
Average	13,279	13,445	1,519	6,661	3,463	494	15,064	53,925

[1] New England includes the 6 States of that section; Middle Atlantic—New York, New Jersey, and Pennsylvania; South Atlantic—Delaware, Maryland, District of Columbia, Virginia, West Virginia, North Carolina, South Carolina, Georgia, and Florida; North Central East—Ohio, Indiana, Illinois, Michigan, and Wisconsin; North Central West—Minnestoa, Iowa, Missouri, North Dakota, South Dakota, Nebraska, and Kansas; South Central—Kentucky, Tennessee, Alabama, Mississippi, Louisiana, Texas, Oklahoma, and Arkansas; Mountain—Montana, Idaho, Wyoming, Colorado, New Mexico, Arizona, Utah, and Nevada; Pacific—Washington, Oregon, California, and Alaska.

[2] Includes a very small amount of fish held in the mountain section.

HOLDINGS OF CURED FISH

Only cured herring and mild-cured salmon are reported held in public cold-storage warehouses in the United States and Alaska during 1928. Monthly holdings of cured herring varied between 13,000,000 and 20,000,000 pounds, the lowest amount being reported in March and the highest in November. Monthly holdings of mild-cured salmon varied between 3,000,000 and 7,000,000 pounds, the lowest being reported in May and the highest in September. Stocks

of cured fish held in public cold storage in the United States and Alaska have been consistently less during late years. The monthly holdings in 1928, compared with the 5-year average of the respective monthly holdings, shows a decrease each month varying between 1 and 13 per cent, and compared with the respective monthly holdings in 1927 there were decreases in 11 months ranging from 3 to 21 per cent. In only one month was there an increase, that being 4 per cent in December.

Holdings of cured fish, 1928

[By species and months]

Month ended the 15th of—	Cured herring	Mild-cured salmon	Total
	Pounds	*Pounds*	*Pounds*
January	15,413,238	6,970,511	22,383,749
February	14,679,029	5,275,499	19,954,528
March	12,857,370	3,650,905	16,508,275
April	13,331,131	3,232,877	16,564,008
May	13,110,194	2,965,752	16,075,946
June	13,504,281	3,276,397	16,780,678
July	14,382,506	3,896,266	18,278,772
August	15,269,833	5,224,056	20,493,889
September	17,424,778	7,230,645	24,655,423
October	19,137,274	6,952,942	26,090,216
November	20,337,528	6,102,052	26,439,580
December	20,256,516	5,515,415	25,771,931

Monthly holdings of cured fish for 1928 and 1927 and the 5-year average compared

[Expressed in thousands of pounds; that is, the 000 omitted]

Month ended the 15th of—	1928	1927	5-year average	Increase (+) or decrease (−)	
				Compared with 1927	Compared with 5-year average
				Per cent	*Per cent*
January	22,384	24,903	23,793	−10	−6
February	19,955	23,570	21,068	−15	−5
March	16,508	20,982	18,878	−21	−13
April	16,564	20,766	18,354	−20	−10
May	16,076	20,364	17,505	−21	−8
June	16,781	20,926	18,612	−20	−10
July	18,279	21,378	20,075	−14	−10
August	20,494	24,096	23,543	−15	−13
September	24,655	28,752	27,296	−14	−10
October	26,090	29,783	29,080	−12	−10
November	26,440	27,270	27,610	−3	−4
December	25,772	24,875	25,965	+4	−1
Average	20,833	23,972	22,648	−13	−8

FOREIGN FISHERY TRADE

The value of foreign trade in fishery products of the United States during 1927 amounted to $80,028,683, of which $58,854,938 represents the value of those imported for consumption and $21,173,745 the value of exports of domestic fishery products. Compared with the previous year this is an increase of 8 per cent in total trade, an increase of 6 per cent in value of imports, and an increase of 13 per cent in exports.

Imports consisted of 360,767,010 pounds of edible products (including fresh, frozen, cured, and canned fish), valued at $37,391,079,

and nonedible products (comprised mainly of fish and marine-animal oils, pearls, and imitation pearls) valued at $21,463,859. Compared with 1927 this is an increase of 16 per cent in the quantity and 7 per cent in the value of edible products imported and an increase of 3 per cent in value of nonedible products imported. The increase in the quantity and value of the edible products imported was due chiefly to larger imports of fresh, frozen, and cured fish. The increase in the value of nonedible products imported was due almost entirely to the greater value of imitation pearls and pearls that had not been strung or set.

Fishery exports consisted of edible products amounting to 170,817,414 pounds, valued at $20,786,353, and nonedible products valued at $387,392. Compared with the previous year this is an increase of 8 per cent in the quantity and 13 per cent in the value of edible products exported and 3 per cent in the value of the nonedible products exported. The increase in edible exports is attributed chiefly to the larger exports of canned fish, while exports of other groups of edible fish products show little change from the preceding year. Exports of nonedible products also show but little change from that for 1927.

Considering only the amount of fishery products on which we usually have an unfavorable trade balance, the imports of fresh and frozen fish were about 21 times the exports in 1927, which is a somewhat higher ratio than in the year previous. In 1928 the imports of cured fish were almost 8 times the exports, which is a slightly higher ratio than a year ago, indicating a slackening in our cured-fish industry. Imports of fresh and canned shellfish were about two times as great as the exports in 1928, which is about the same ratio as in 1927 and 1926. Imports of all edible fishery products were about two times the exports, which is about the same ratio as in the previous year. Imports of fish and marine-animal oils were about 142 times the amount of the exports in 1928, which is a somewhat lower ratio than a year ago. While the unfavorable trade balance exists for fish and marine-animal oils, the fishery trade in the United States continues to discard large quantities of fish waste and offal, which are suitable for manufacture into oil and meal.

Contrasting these products with those on which we usually have a favorable trade balance, the exports of canned fish (which is the most important export group) were about four times the imports, which is about the same ratio as in 1927. Exports of miscellaneous edible fishery products were about four times the quantity of the imports in 1928, which is a considerably higher ratio than prevailed in 1927.

Considering the total trade, the value of all fishery products imported was about three times the value of all fishery products exported.

Exports of domestic fishery products, 1927 and 1928

Items	1927		1928	
	Quantity	*Value*	*Quantity*	*Value*
Fish, fresh, frozen, or packed in ice:				
Salmon ..... pounds	3,079,251	$471,764	3,453,922	$555,316
Other fresh fish ..... do	5,000,204	439,656	4,539,413	405,183
Total ..... do	8,079,455	911,420	7,993,335	960,499

Exports of domestic fishery products, 1927 and 1928—Continued

Items	1927		1828	
	Quality	*Value*	*Quality*	*Value*
Fish, salted or dry cured:				
Cod.....do....	3, 820, 178	$374, 347	3, 165, 472	$361, 968
Haddock, hake and pollock.....do....	2, 189, 403	158, 279	1, 951, 305	150, 548
Herring.....do....	2, 342, 391	136, 531	1, 888, 759	119, 497
Salmon.....do....	2, 356, 291	510, 406	4, 367, 236	975, 502
Other.....do....	2, 203, 527	182, 123	1, 646, 358	128, 892
Total.....do....	12, 911, 790	1, 361, 686	13, 019, 130	1, 736, 407
Fish, pickled:				
Salmon.....do....	2, 947, 400	787, 371	1, 913, 000	502, 673
Other.....do....	1, 522, 400	93, 392	932, 800	72, 045
Total.....do....	4, 469, 800	880, 763	2, 845, 800	574, 718
Fish, canned:				
Salmon.....do....	38, 247, 932	6, 028, 960	40, 952, 705	7, 661, 733
Sardines.....do....	79, 439, 503	6, 817, 662	80, 253, 474	6, 522, 711
Other.....do....	2, 014, 727	310, 766	9, 362, 496	939, 288
Total.....do....	119, 702, 162	13, 157, 388	130, 568, 675	15, 123, 732
Shellfish:				
Canned.....do....	3, 863, 323	825, 636	4, 730, 944	1, 011, 106
Not canned.....do....	7, 482, 863	1, 052, 802	8, 260, 959	1, 194, 194
Total.....do....	11, 346, 186	1, 878, 438	12, 991, 903	2, 205, 300
Other fish products.....do....	1, 918, 114	150, 929	3, 398, 571	185, 697
Total edible products.....do....	158, 427, 507	18, 340, 624	170, 817, 414	20, 786, 353
Fish oils.....do....	692, 128	80, 051	881, 820	105, 368
Buttons, pearl, or shell.....gross..	395, 605	128, 400	454, 529	135, 504
Sponges.....pounds..	100, 389	167, 828	114, 917	146, 520
Total.....	----------	296, 228	----------	282, 024
Total noneidble products.....	----------	376, 279	----------	387, 392
Grand total.....	----------	18, 716, 903	----------	21, 173, 745

Imports of fishery products entered for consumption, 1927 and 1928

Item	1927		1928	
	Pounds	*Value*	*Pounds*	*Value*
Edible fishery products:				
Fish, fresh, frozen, or packed in ice—				
Cod, haddock, hake, and pollock	727, 786	$35, 484	829, 906	$36, 974
Eels	492, 522	54, 685	891, 000	110, 191
Fresh-water fishes	52, 562, 778	4, 993, 917	52, 458, 338	5, 191, 666
Halibut	4, 014, 279	478, 685	4, 357, 977	490, 653
Herring (frozen)	2, 120, 701	108, 306	2, 219, 299	101, 986
Herring (fresh sea)	16, 959, 583	132, 786	54, 331, 131	344, 212
Mackerel	2, 187, 412	155, 925	2, 169, 342	146, 157
Salmon	6, 002, 487	664, 090	6, 029, 845	683, 181
Smelts	6, 716, 378	930, 845	8, 800, 895	1, 209, 779
Swordfish	713, 987	106, 422	802, 045	132, 371
Tuna	32, 485, 097	1, 640, 230	30, 351, 313	1, 852, 999
Other dutiable	10, 065, 451	1, 083, 200	8, 036, 000	817, 941
Total	135, 048, 461	10, 384, 575	171, 277, 091	11, 118, 110
Fish, salted, dried, smoked, or pickled—				
Cod, dried	28, 989, 347	2, 018, 798	30, 782, 655	2, 556, 509
Finnan haddie	1, 144, 817	102, 202	1, 237, 452	107, 230
Hake and pollock, dried	755, 414	44, 756	1, 884, 404	112, 135
Herring—				
Dried	1, 210, 687	75, 525	1, 036, 843	51, 863
Pickled or salted	39, 291, 828	2, 541, 124	46, 439, 695	3, 064, 147
Smoked, skinned, or boned	296, 406	38, 562	73, 020	7, 811
Mackerel, pickled or salted	12, 071, 146	789, 004	8, 130, 849	568, 700
Salmon dried	226, 037	26, 287	4, 225	443
Salmon, kippered, smoked, salted, pickled or otherwise prepared	618, 875	75, 762	820, 470	95, 353
Other kippered, smoked, salted, pickled, or otherwise prepared, not elsewhere specified	5, 133, 696	567, 916	25, 464, 235	2, 338, 707
Other dried fish	3, 756, 014	576, 005	5, 289, 517	712, 998
Others in bulk or packages	24, 100, 628	2, 429, 733	3, 233, 555	365, 303
Total	117, 594, 895	9, 285, 674	124, 396, 920	9, 981, 199

Imports of fishery products entered for consumption, 1927 and 1928—Continued

Item	1927		1928	
Fish packed in oil or other substances—	*Pounds*	*Value*	*Pounds*	*Value*
Sardines	26,255,351	$5,094,583	29,243,293	$5,154,491
All others	5,922,330	1,430,683	5,132,731	1,336,825
Total	32,177,681	6,525,266	34,376,024	6,491,316
Fish roe, frozen, prepared, or preserved—				
Caviar	413,658	579,021	472,257	825,368
Other fish roe, preserved	310,413	76,683	299,492	56,598
Total	724,071	655,704	771,749	881,966
Shellfish—				
Crabs	56,708	4,568	76,660	14,879
Crab meat packed in ice, frozen, or otherwise prepared or preserved	9,300,219	4,052,750	12,506,130	4,897,835
Lobsters canned	1,773,413	1,016,706	1,605,881	1,004,472
Lobsters (other than canned), fresh frozen, packed in ice, or prepared or preserved in any manner (not specially provided for)	6,369,392	1,660,356	6,537,792	1,720,850
Turtles	745,030	40,503	670,501	38,041
Other shellfish and shrimp	8,067,729	1,228,144	8,548,262	1,242,411
Total	26,312,491	8,003,027	29,945,226	8,918,488
Total, edible fishery products	311,857,599	34,854,246	360,767,010	37,391,079
Nonedible fishery products:				
Fish and marine-animal oils—	*Quantity*		*Quantity*	
Cod oil—Gallons	2,114,264	1,064,228	1,569,234	801,278
Cod-liver oil—do	2,375,297	2,231,032	2,571,936	2,522,672
Herring, menhaden, and sod oil—do	5,228,789	1,733,782	5,116,716	1,784,293
Other fish oils—do	93,097	28,643	316,471	92,080
Seal oil—do	629,160	250,969	194,794	86,407
Whale oil, sperm—do	265,983	95,597	442,041	167,776
Whale oil, other—do	7,084,127	3,178,725	6,456,866	3,021,378
Total—do	17,790,717	8,582,976	16,668,058	8,475,884
Pearls and imitation pearl—				
Pearls and parts, not strung or set		6,043,162		7,083,654
Imitation half pearls and hollow or filled pearls, without holes or with holes partly through—number	21,019,130	108,832		165,499
Imitation solid pearls, wholly or partly pierced, mounted or unmounted—number	208,426	34,189		40,298
Imitation pearl beads		2,012,727		1,352,115
Total		8,198,910		8,641,566
Shells and buttons of pearl or shell—				
Shells, not manufactured—				
Green snail shell—pounds	169,830	24,909	104,675	12,698
Mother-of-pearl—do	6,516,562	1,708,675	6,516,745	1,882,556
All others—do	4,353,837	230,432	2,280,987	257,313
Shells, manufactured		101,581		72,558
Shell pearl buttons—				
Fresh-water—gross	1,419	963	3,015	1,344
Ocean or trochus—do	106,946	35,282	118,758	45,375
Buttons, blanks, not turned, faced, or drilled—gross	48	20	3,072	1,640
Buttons (from Philippine Islands)—do	715,913	350,770	922,219	438,100
Total		2,452,632		2,711,584
Sponges—pounds	811,456	1,075,398	933,232	1,124,297
Agar-agar—do	383,250	243,168	397,368	285,659
Ambergris—do	491	95,412	160	46,297
Cuttlefish bone—do	281,261	36,510	287,403	35,870
Fish for purposes other than human consumption—pounds	1,226,163	29,182	3,678,684	61,633
Fish skins, raw or salted—do	435,723	19,864	745,880	29,440
Fish sounds, crude, dried, or salted for preservation only—pounds	58,210	8,835	39,705	6,507
Sea grass, eelgrass, and seaweed, dyed or manufactured		34,470		44,636
Whalebone, unmanufactured—pounds	3,441	1,761	350	456
Whalebone, manufactures of—do	231	248	1	30
Total		469,450		510,528
Total nonedible fishery products		20,779,366		21,463,859
Grand total		55,633,612		58,854,938

Imports for consumption and domestic exports of fishery products, 1928, and ratio comparisons

Item	Imports		Exports		Ratio of imports to exports	
	Pounds	*Value*	*Pounds*	*Value*	*Quantity*	*Value*
Edible fishery products:						
Fish, fresh, frozen, or packed in ice	171,277,091	$11,118,110	7,993,335	$960,499	214:10	116:10
Fish, salted, dried, smoked, or pickled	124,396,920	9,981,199	15,864,930	2,311,125	78:10	43:10
Fish, canned or packed in oil	34,376,024	6,491,316	130,568,675	15,123,732	10:38	10:23
Shellfish, canned or fresh	29,945,226	8,918,488	12,991,903	2,205,300	23:10	40:10
Other fish products, roe, caviar, etc	771,749	881,966	3,398,571	185,697	10:44	47:10
Total	360,767,010	37,391,079	170,817,414	20,786,353	21:10	18:10
Nonedible fishery products:						
Fish and marine-animal oils [1]	125,010,435	8,475,884	881,820	105,368	1,418:10	804:10
All other		12,987,975		282,024		461:10
Total		21,463,859		387,392		554:10
Grand total		58,854,938		21,173,745		28:10

[1] Gallon of fish or marine-animal oil calculated at 7.5 pounds.

FISHERIES OF THE NEW ENGLAND STATES

The latest statistical canvass made by this division of the fisheries and fishery industries of New England (Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut) was for the calendar year 1924, and complete statistics were published in the report of the division of fishery industries for 1925 and in condensed form in Statistical Bulletin No. 703.

During 1924 the fisheries and fishery industries of New England gave employment to 24,513 persons, of whom 15,983 were employed in fishing operations, 1,922 in the wholesale fishery trade, and 6,608 in the canning, salting, smoking, and by-products industries. The yield of the fisheries aggregated 406,822,165 pounds, valued at $18,818,132, while the output of the canning, salting, smoking, and by-products industries was valued at $14,253,831. Annual statistics are collected on the vessel fisheries that center at Boston and Gloucester, Mass., and Portland, Me. A discussion of those for 1928 follows:

VESSEL FISHERIES AT PRINCIPAL NEW ENGLAND PORTS

ECONOMIC ASPECT

Landings of fishery products at the principal New England ports (Boston and Gloucester, Mass., and Portland, Me.) during 1928 amounted to 277,981,691 pounds as landed, valued at $10,849,145. This exceeded the amount landed and value of the landings for any year for which records are available. Increased landings are due in a large measure to the use of many of the important species for filleting purposes. Of the total landings, 99 per cent consisted of fresh fish and 1 per cent of salt fish.

Boston received the lion's share, the landings there in 1928 amounting to 218,387,689 pounds, valued at $8,806,164, or 79 per cent of the total. This is an increase over 1927 of 12 per cent in amount and 19 per cent in value. Landings at Gloucester in 1927 amounted to 41,903,833 pounds, valued at $1,477,700, or 15 per cent of the total.

This is a decrease of 20 per cent in amount and 1 per cent in value compared with the amount and value of the landings in 1927. At Portland 17,690,169 pounds of fishery products, valued at $565,281, were landed. This was 6 per cent of the total landings at the three ports and an increase of 8 per cent in amount and 5 per cent in value compared with the landings in 1927.

Species landed.—Among the landings of fresh fish, haddock far outranked other species in volume landed, the amount of all sizes in 1928 being 155,322,225 pounds, or 56 per cent of the total fresh fish. This is an increase of 21 per cent over the amount landed in 1927. Of the total haddock landed, 47 per cent were taken from South Channel and the remainder chiefly from Georges Bank, Nantucket Shoals, and Browns Bank.

Cod was of next importance, although a poor second. The landings of all sizes of this species, fresh, amounted to 58,154,811 pounds, or 21 per cent of the total amount of the fresh fish landed at the three ports in 1927. This is a decrease of 5 per cent from that landed in 1927. Cod was taken mainly on Georges Bank and South Channel.

Mackerel landings, fresh, amounted to 24,164,760 pounds at the three ports, or 9 per cent of the total landings of fresh fish. This is 78 per cent of the total catch of mackerel by the American mackerel fleet, and a decrease of 23 per cent compared with the landings of this species in 1927.

Flounders, a species rapidly assuming importance, ranked fourth in importance among the fresh fish, with landings of 10,414,020 pounds, or 4 per cent of the total landings of all fresh fish. This is an increase of 24 per cent over 1927.

Hake, with landings of 8,411,563 pounds, or 3 per cent of the total fresh-fish landings, ranked fifth in importance and increased 44 per cent over the landings of the previous year.

Pollock, with landings of 8,031,830 pounds, or 3 per cent of the total landings of fresh fish, in 1928 ranked sixth in importance and increased 5 per cent over the landings of the previous year.

The landings of all other varieties of fresh fish, amounting to 4 per cent of the total, increased in 1928 over the respective amount of the landings in 1927, except cusk, halibut, and herring.

Among the salt fish herring was the most important species, with landings of 1,410,564 pounds. This was 53 per cent of the landings of all salt fish and was a decrease of 68 per cent compared with the landings of this species in 1927. The landings of salt ground fish (cod, haddock, hake, cusk, pollock, and halibut) amounted to 1,186,234 pounds, or 44 per cent of the total landings of salt fish at the three ports. The combined total landings of all of the above species of ground fish landed in 1928 decreased 44 per cent compared with the total of these respective species of ground fish landed in 1927. Landings of salt mackerel were almost insignificant in 1928, amounting to 88,137 pounds, which was a decrease of 50 per cent under the landings of this species, salted, in 1927.

While the landings of salt fish by vessels at the three ports has declined tremendously during late years, it does not indicate that the salt-fish trade is declining at the same rate, although a decline is apparent. Due to improved methods of handling fish aboard vessels, improved methods of catching, and faster vessels, more fish can be brought in fresh. Large quantities of the fresh fish are still

salted, especially cod, most of the trade being centered at Gloucester. Large quantities of the fresh fish are also converted into dried and smoked fish products. It has been estimated that the value of all cured fish products prepared in the United States annually is about $12,000,000.

Fishery by months.—Total landings of fish at the three ports during the month of October, which amounted to 29,918,466 pounds, exceeded those for any other month during the year. Landings during July were second largest, amounting to 27,829,838 pounds. Landings during June were third largest, amounting to 26,610,731 pounds, although those during March were almost as large, amounting to 26,046,162 pounds. As a rule, landings during each of the warmer months (May to September) were larger than during the colder months (November to April).

The following table gives the economic statistics obtained on the landings of fishery products at Boston, Gloucester, and Portland during 1927 for vessels of 5 net tons and upward, as measured by the United States Customs Service. The weights of fresh and salted fish given in this table represent the weights as landed from the vessels. Many of the fresh fish landed are eviscerated on the vessels. This is true of the ground-fish group except the flounders. Swordfish are eviscerated and beheaded. Fresh mackerel, flounders, and herring are landed in the round. Species included under "other" are generally landed in the round. Salted ground fish are landed eviscerated and beheaded; salted mackerel, eviscerated and split; and salted herring, gibbed. The values are those received by the fishermen. The grades or sizes given for certain species are those recognized in the trade.

Landings by fishing vessels at principal New England ports, 1928

BOSTON: BY MONTHS

Species	January		February		March		April	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:								
Large	1,826,965	$110,422	3,422,248	$159,508	3,977,397	$158,760	1,990,791	$80,501
Market	546,640	20,482	264,165	12,244	350,390	12,190	600,305	16,278
Scrod	12,230	269	8,660	208	10,455	210	12,795	159
Haddock, fresh:								
Large	7,695,798	422,796	9,265,736	562,229	15,044,455	588,830	11,751,406	281,569
Scrod	923,270	38,341	1,132,985	49,026	1,625,740	44,408	1,474,785	20,777
Hake, fresh:								
Large	482,050	23,893	255,435	15,228	214,820	12,898	72,476	2,966
Small			500	15	500	10		
Pollock, fresh	340,937	15,208	184,164	11,359	118,092	6,785	75,878	4,521
Cusk, fresh	182,010	7,322	90,545	4,487	142,060	5,987	158,245	3,276
Halibut, fresh	17,934	7,528	163,657	39,956	432,038	73,675	558,532	92,289
Flounders, fresh	479,225	36,598	811,858	44,430	823,145	40,528	920,695	37,190
Other, fresh	72,765	5,336	108,631	5,519	106,642	5,112	111,452	2,587
Total, fresh	12,578,924	688,195	15,708,584	904,209	22,845,734	949,393	17,727,360	542,113
Landed in 1927:								
Fresh	15,760,931	581,195	16,732,362	550,548	19,859,179	690,957	12,443,463	489,618

Landings by fishing vessels at principal New England ports, 1928—Continued

BOSTON: BY MONTHS—Continued

Species	May		June		July	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:						
Large	1,735,122	$61,862	1,751,448	$40,219	2,020,618	$79,065
Market	1,059,592	23,668	1,132,426	25,650	1,515,951	34,286
Scrod	900	9	1,000	10	215	2
Cod, salted: Large					1,865	37
Haddock, fresh:						
Large	9,116,904	174,267	8,256,160	221,255	9,438,712	186,979
Scrod	820,740	8,492	953,620	12,325	755,635	8,708
Hake, fresh: Large	101,205	3,326	196,625	3,529	305,130	4,526
Hake, salted: Large					6,760	112
Pollock, fresh	87,050	2,625	101,485	2,030	131,757	3,146
Cusk, fresh	113,765	2,041	33,592	762	60,055	1,112
Halibut, fresh	373,474	66,059	430,642	72,268	335,228	49,750
Mackerel, fresh	1,675,005	98,168	5,130,135	213,090	3,915,625	185,053
Flounders, fresh	1,018,805	21,244	446,700	15,075	372,549	13,952
Swordfish, fresh			185,558	59,142	1,301,427	262,067
Herring, fresh					3,000	38
Other, fresh	87,630	1,511	33,848	734	58,550	2,943
Total fresh	16,190,192	463,272	18,653,239	666,089	20,214,452	831,627
Total salted					8,625	149
Grand total	16,190,192	463,272	18,653,239	666,089	20,223,077	831,776
Landed in 1927:						
Fresh	15,528,116	448,984	17,733,302	580,727	15,176,211	628,497
Salted	8,000	390	4,000	200	32,400	1,456
Total	15,536,116	449,374	17,737,302	580,927	15,208,611	629,953

Species	August		September		October		November	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:								
Large	2,321,858	$88,490	1,448,665	$89,784	1,835,518	$94,945	1,453,236	$82,142
Market	2,696,825	58,457	1,870,875	50,652	2,881,355	75,050	1,059,325	36,803
Scrod	700	4	4,050	54	11,270	192	5,565	88
Haddock, fresh:								
Large	9,190,936	211,603	10,388,787	326,988	14,613,016	445,559	9,253,516	474,126
Scrod	561,355	7,362	664,020	12,777	1,525,275	27,441	805,580	26,966
Hake, fresh:								
Large	407,575	6,772	650,200	13,881	1,184,314	21,675	1,467,768	39,478
Small					22,000	277	57,395	973
Pollock, fresh	389,345	7,032	314,369	6,707	432,245	7,457	422,404	6,955
Cusk, fresh	61,380	939	42,995	1,002	171,090	3,538	173,050	4,622
Halibut, fresh	471,760	77,367	263,316	55,333	163,971	32,414	61,004	16,856
Mackerel, fresh	2,687,000	177,803	902,404	122,635	617,323	32,838	287,952	34,751
Mackerel, salted	19,600	1,266						
Flounders, fresh	331,125	16,999	580,167	30,373	962,138	48,291	922,167	47,197
Swordfish, fresh	659,256	146,043	114,745	29,732	2,568	808	216	69
Herring, fresh	15,000	200	1,000	20				
Herring, salted					6,000	180		
Other, fresh	19,165	1,300	90,396	12,748	51,981	4,038	64,332	2,281
Total fresh	19,813,280	800,281	17,335,989	752,686	24,474,064	794,523	16,033,510	773,307
Total salted	19,600	1,266			6,000	180		
Grand total	19,832,880	801,547	17,335,989	752,686	24,480,064	794,703	16,033,510	773,307
Landed in 1927:								
Fresh	19,197,510	815,383	18,189,319	637,253	18,835,373	673,279	14,114,617	531,703
Salted	19,400	1,056						
Total	19,216,910	816,439	18,189,319	637,253	18,835,373	673,279	14,114,617	531,703

Landings by fishing vessels at principal New England ports, 1928—Continued

BOSTON: BY MONTHS—Continued

Species	December		Total, 1928		1927	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:						
Large	1,307,232	$68,370	25,091,098	$1,114,068	29,678,238	$1,189,704
Market	803,035	24,389	14,780,884	390,149	10,490,120	267,313
Scrod	14,286	518	82,126	1,723	141,315	1,913
Cod, salted: Large			1,865	37		
Haddock, fresh:						
Large	10,771,663	403,160	124,787,089	4,299,361	96,118,574	2,878,336
Scrod	809,188	17,985	12,052,193	274,608	13,741,779	270,733
Hake, fresh:						
Large	1,164,025	32,353	6,501,623	180,525	4,724,916	130,586
Small	1,250	48	81,645	1,323	54,525	699
Hake, salted: Large			6,760	112		
Pollock, fresh	489,610	9,824	3,087,336	83,649	3,201,525	86,112
Cusk, fresh	344,460	8,381	1,573,247	43,469	1,680,124	44,905
Halibut, fresh	45,606	13,547	3,316,262	597,042	4,320,036	764,079
Mackerel, fresh	69,617	8,573	15,285,061	872,911	20,380,280	860,083
Mackerel, salted			19,600	1,266	63,800	3,102
Flounders, fresh	914,292	48,967	8,582,866	400,754	(1)	(1)
Swordfish, fresh			2,263,770	497,861	(1)	(1)
Herring, fresh	400	12	19,400	270	(1)	(1)
Herring, salted			6,000	180		
Other, fresh	43,472	2,747	848,864	46,856	10,345,557	873,977
Total, fresh	16,778,136	638,874	218,353,464	8,804,569	194,876,989	7,368,440
Total, salted			34,225	1,595	63,800	3,102
Grand total	16,778,136	638,874	218,387,689	8,806,164	194,940,789	7,371,542
Landed in 1927:						
Fresh	11,306,606	740,296			194,876,989	7,368,440
Salted					63,800	3,102
Total	11,306,606	740,296			194,940,789	7,371,542

[1] Included in "Other, fresh."

NOTE.—The weights of fresh and salted fish given in these statistics represent the fish as landed from the vessels, and the values are those received by the fishermen. Large cod are classified as those weighing over 10 pounds; market cod, 2½ to 10 pounds; and scrod cod, 1 to 2½ pounds. Large haddock are those weighing over 2½ pounds and scrod haddock 1 to 2½ pounds. Large hake are those weighing over 6 pounds and small hake under 6 pounds.

GLOUCESTER: BY MONTHS

Species	January		February		March		April	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:								
Large	265,050	$18,169	478,080	$30,039	1,068,855	$49,533	1,306,405	$54,352
Market	210	8	660	33	14,430	403	64,705	1,240
Cod, salted:								
Large					2,400	120	24,455	1,250
Market					150	6	2,949	123
Haddock, fresh:								
Large	169,270	10,196	109,270	7,717	441,020	14,817	1,622,905	29,545
Scrod	38,590	1,571	23,850	1,260	53,015	1,255	160,010	1,374
Hake, fresh: Large							1,300	14
Pollock, fresh	24,110	1,714			1,155	12	4,285	42
Cusk, fresh							9,810	108
Flounders, fresh	240,340	13,569	196,760	13,815	390,090	32,808	110,600	6,905
Herring, salted	787,140	30,271						
Total, fresh	737,570	45,227	808,620	52,864	1,968,565	98,828	3,280,020	93,580
Total, salted	787,140	30,271			2,550	126	27,404	1,373
Grand total	1,524,710	75,498	808,620	52,864	1,971,115	98,954	3,307,424	94,953
Landed in 1927:								
Fresh	1,391,540	42,587	1,755,345	49,382	6,548,000	145,929	4,923,195	138,149
Salted	1,696,480	61,420	385	16	341,395	12,762	298,008	10,029
Total	3,088,020	104,007	1,755,730	49,398	6,889,395	158,691	5,221,203	148,178

Landings by fishing vessels at principal New England ports, 1928—Continued

GLOUCESTER: BY MONTHS—Continued

Species	May		June		July	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:						
Large	2,533,670	$74,243	2,415,325	$67,122	1,480,240	$40,045
Market	532,090	10,645	530,645	8,821	600,900	12,584
Scrod	150	2			400	4
Cod, salted:						
Large	192,890	10,092	154,287	8,004	105,460	5,593
Market	38,800	1,533	43,528	1,692	21,590	843
Scrod					400	11
Haddock, fresh:						
Large	1,078,170	19,475	491,655	9,256	1,254,085	17,629
Scrod	52,210	587	44,055	480	82,215	780
Hake, fresh, large	13,505	234	17,485	313	19,665	274
Pollock, fresh	135,670	3,230	171,105	4,018	30,705	409
Pollock, salted	155	4	1,395	28	1,250	25
Cusk, fresh	14,480	173	21,300	292	50,870	779
Cusk, salted	240	5	780	16	2,160	43
Halibut, salted	80	8	2,815	246	45	2
Mackerel, fresh	85,210	4,981	2,053,240	75,986	2,359,580	93,179
Mackerel, salted					19,310	676
Flounders, fresh	32,750	1,369	26,900	1,047		
Swordfish, fresh					410	94
Other, fresh					23,800	238
Total, fresh	4,477,905	114,939	5,771,710	167,335	5,902,870	166,015
Total, salted	232,165	11,642	202,805	9,986	150,215	7,193
Grand total	4,710,070	126,581	5,974,515	177,321	6,053,085	173,208
Landed in 1927:						
Fresh	3,978,079	75,882	3,742,935	63,447	6,513,856	140,487
Salted	417,040	15,640	635,642	23,873	239,850	9,065
Total	4,395,119	91,522	4,378,577	87,320	6,753,706	149,552

Species	August		September		October		November	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:								
Large	734,500	$20,015	864,785	$43,260	581,097	$28,744	330,230	$18,763
Market	484,245	10,805	272,405	5,830	180,220	4,156	45,180	1,175
Scrod	2,420	24			2,600	30	1,895	22
Cod, salted:								
Large	174,370	9,301	130,645	7,150	40,695	2,132	13,125	716
Market	18,618	792	9,030	406	3,835	167	962	44
Haddock, fresh:								
Large	854,730	13,259	537,350	12,536	1,231,105	28,181	525,057	26,429
Scrod	36,570	378	21,930	334	106,135	1,395	52,520	1,607
Haddock, salted:								
Large					8,170	425		
Scrod					70	2		
Hake, fresh:								
Large	19,981	250	82,655	1,669	134,240	2,121	77,607	1,782
Small					2,355	37	875	17
Hake, salted:								
Large			760	18	1,115	17		
Small							840	17
Pollock, fresh	45,325	562	209,835	4,715	532,305	10,361	1,663,660	27,673
Pollock, salted	2,505	50	2,505	47	700	18	80	2
Cusk, fresh	97,445	1,580	58,215	963	28,675	486	12,595	250
Cusk, salted	2,905	66	430	9				
Halibut, fresh					187	41	704	170
Halibut, salted	580	58						
Mackerel, fresh	1,333,800	63,221	195,870	24,766	669,671	28,417	1,054,179	109,223
Mackerel, salted	38,520	3,027	9,980	1,031	340	68		
Flounders, fresh	11,430	457	43,320	2,518	103,440	5,910	82,147	5,675
Swordfish, fresh	10,400	2,080	7,530	1,807				
Herring, fresh			181,400	1,814	71,400	889		
Other, fresh	101,070	1,029			7,852	622	15,987	272
Total, fresh	3,731,916	113,660	2,475,295	100,212	3,651,282	111,390	3,862,636	193,058
Total, salted	237,498	13,294	153,350	8,661	54,925	2,829	15,007	779
Grand total	3,969,414	126,954	2,628,645	108,873	3,706,207	114,219	3,877,643	193,837
Landed in 1927:								
Fresh	7,670,980	187,888	2,945,538	97,504	2,106,140	103,080	2,919,086	64,817
Salted	313,645	12,662	102,752	4,924	53,733	2,520	14,410	682
Total	7,984,625	200,550	3,048,290	102,428	2,159,873	105,600	2,933,496	65,499

Landings by fishing vessels at principal New England ports, 1928—Continued

GLOUCESTER: By months—Continued

Species	December		Total, 1928		1927	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:						
Large	268,689	$15,587	12,326,926	$459,872	16,401,220	$469,203
Market	36,195	838	2,761,885	56,538	1,958,342	32,949
Scrod	325	7	7,790	89	10,586	105
Cod, salted:						
Large	15,065	904	853,392	45,262	1,658,590	65,905
Market	550	27	140,012	5,633	216,503	6,302
Scrod			400	11	3,833	76
Haddock, fresh:						
Large	589,405	20,870	8,904,022	209,910	10,533,191	181,081
Scrod	75,395	1,460	746,495	12,481	730,000	6,283
Haddock, salted:						
Large			8,170	425	49,580	625
Scrod			70	2		
Hake, fresh:						
Large	18,140	343	384,578	7,000	213,015	2,977
Small	500	7	3,730	61		
Hake, salted:						
Large	445	10	2,320	45	14,505	291
Small			840	17	760	15
Pollock, fresh	1,265,020	23,077	4,083,175	75,813	3,636,000	72,067
Pollock, salted			8,590	174	9,570	191
Cusk, fresh	4,610	64	298,000	4,695	324,500	4,175
Cusk, salted			6,515	139	31,732	731
Halibut, fresh	17	3	908	214	37,085	2,937
Halibut, salted			3,520	314	5,797	555
Mackerel, fresh	392,900	42,253	8,144,450	442,026	10,459,005	411,813
Mackerel, salted			68,150	4,802	95,390	5,157
Flounders, fresh	84,430	5,773	1,322,207	89,846	(1)	(1)
Swordfish, fresh			18,340	3,981	(1)	(1)
Herring, fresh			252,800	2,703	(1)	(1)
Herring, salted	617,424	23,018	1,404,564	53,289	4,410,436	163,825
Other, fresh	3,275	197	151,984	2,358	1,752,900	66,672
Total, fresh	2,738,901	110,479	39,407,290	1,367,587	46,055,844	1,250,262
Total, salted	633,484	23,959	2,496,543	110,113	6,496,696	243,673
Grand total	3,372,385	134,438	41,903,833	1,477,700	52,552,540	1,493,935
Landed in 1927:						
Fresh	1,561,150	141,110			46,055,844	1,250,262
Salted	2,383,356	90,080			6,496,696	243,673
Total	3,944,506	231,190			52,552,540	1,493,935

[1] Included in "Other, fresh."

PORTLAND: By months

Species	January		February		March		April	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:								
Large	35,644	$2,155	212,900	$8,530	107,361	$4,154	204,385	$5,829
Market	24,563	1,145	23,377	1,265	34,150	1,563	50,495	1,137
Scrod	6,413	67	4,355	46	6,045	59	2,955	19
Cod, salted, large							116,000	1,710
Haddock, fresh:								
Large	309,008	19,850	315,203	20,499	826,630	30,649	981,485	16,660
Scrod	10,146	103	9,450	95	8,980	92	3,103	21
Hake, fresh:								
Large			515	26	3,540	144		
Small	41,193	1,766	20,640	797	30,520	989	5,790	143
Hake, salted, small			1,125	17				
Pollock, fresh	17,681	610	14,008	596	22,972	1,027	5,120	100
Cusk, fresh	51,323	2,247	34,885	1,880	55,252	2,405	66,673	1,434
Cusk, salted					100	1		
Halibut, fresh	1,085	286	5,147	966	11,535	2,086	2,689	495
Flounders, fresh	66,813	3,170	63,932	3,145	82,945	3,917	22,432	800
Other, fresh	15,774	454	29,773	851	39,277	1,240	12,036	285
Total, fresh	579,643	31,853	734,185	38,696	1,229,213	47,425	1,357,163	26,923
Total, salted			1,125	17	100	1	116,000	1,710
Grand total	579,643	31,853	735,310	38,713	1,229,313	47,426	1,473,163	28,633
Landed in 1927:								
Fresh	621,969	30,807	484,143	25,459	1,341,123	44,367	1,661,918	44,516
Salted			745	16	2,630	83	8,890	373
Total	621,969	30,807	484,888	25,475	1,343,753	44,450	1,670,808	44,889

Landings by fishing vessels at principal New England ports, 1928—Continued

PORTLAND: BY MONTHS—Continued

Species	May		June		July	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:						
Large	376,971	$12,249	281,890	$11,201	269,556	$11,385
Market	62,154	1,343	15,586	325	6,959	157
Scrod	4,565	41	965	8	1,385	8
Cod, salted:						
Large	21,775	1,087	1,510	76		
Market	1,970	79	135	5		
Haddock, fresh:						
Large	2,475,252	37,399	1,258,817	20,444	659,009	13,018
Scrod	895	4	2,140	14	3,995	20
Hake, fresh:						
Large	6,742	125	685	7	610	8
Small	45,826	924	35,790	423	44,315	806
Hake, salted, small	260	5				
Pollock, fresh	67,492	1,394	95,421	1,438	117,279	2,172
Pollock, salted	45	1				
Cusk, fresh	39,305	879	6,280	93	969	29
Cusk, salted	620	12				
Halibut, fresh	35,802	5,921	3,430	628	530	78
Mackerel, fresh			236,000	8,903	96,114	4,138
Flounders, fresh	45,485	892	13,795	138	33,555	832
Swordfish, fresh					121,724	23,073
Herring, fresh			9,000	132		
Other, fresh	16,261	345	21,533	464	197,676	3,853
Total, fresh	3,176,750	61,516	1,981,332	44,218	1,553,676	59,577
Total, salted	24,670	1,184	1,645	81		
Grand total	3,201,420	62,700	1,982,977	44,299	1,553,676	59,577
Landed in 1927:						
Fresh	2,553,151	48,520	1,856,378	43,858	1,092,078	41,052
Salted	18,965	806	1,320	56	29,907	1,013
Total	2,572,116	49,326	1,857,698	43,914	1,121,985	42,065

Species	August		September		October		November	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:								
Large	539,598	$20,264	214,265	$10,614	195,940	$10,301	108,685	$5,975
Market	43,557	1,095	11,838	1,879	30,408	756	28,819	789
Scrod	2,090	21	2,795	15	10,992	59	5,810	36
Cod, salted:								
Large	7,240	344						
Market	3,000	113						
Haddock, fresh:								
Large	174,505	6,232	238,389	10,921	490,436	20,257	474,352	22,299
Scrod	5,510	50	12,541	83	18,492	114	19,580	115
Hake, fresh:								
Large	3,620	82	7,065	103	135	3	145	4
Small	81,407	1,552	331,628	6,715	344,995	7,251	259,295	6,162
Pollock, fresh	91,172	1,476	129,978	1,845	128,493	1,795	102,638	1,364
Cusk, fresh	1,903	33	7,700	154	83,770	1,885	56,695	1,435
Halibut, fresh	1,498	393	307	36	1,395	222	564	108
Mackerel, fresh	357,627	18,744	26,998	1,630	7,422	344	11,088	1,123
Mackerel, salted			387	31				
Flounders, fresh	15,610	453	21,183	1,316	37,015	1,805	46,985	2,712
Swordfish, fresh	119,996	24,994	19,810	4,762				
Herring, fresh	32,100	401			301,100	1,231	91,400	572
Other, fresh	226,259	3,539	71,119	1,531	81,602	1,602	52,544	1,042
Total, fresh	1,696,452	79,329	1,095,616	41,604	1,732,195	47,625	1,258,600	43,736
Total, salted	10,240	457	387	31				
Grand total	1,706,692	79,786	1,096,003	41,635	1,732,195	47,625	1,258,600	43,736
Landed in 1927:								
Fresh	1,724,483	73,709	1,866,309	58,449	1,307,303	39,219	993,397	39,227
Salted	24,291	808	25,405	1,083	15,985	729	2,505	124
Total	1,748,774	74,517	1,891,714	59,532	1,323,288	39,948	995,902	39,351

Landings by fishing vessels at principal New England ports, 1928—Continued

PORTLAND: BY MONTHS—Continued

Species	December		Total, 1928		1927	
	Pounds	*Value*	*Pounds*	*Total*	*Pounds*	*Total*
Cod, fresh:						
Large	126,006	$6,135	2,673,201	$108,792	2,237,740	$95,971
Market	45,495	1,257	377,401	12,711	362,189	11,641
Scrod	5,130	32	53,500	411	87,695	936
Cod, salted:						
Large			146,525	3,217	99,252	4,153
Market			5,105	197	8,906	328
Scrod					200	4
Haddock, fresh:						
Large	519,693	20,658	8,722,779	238,886	7,273,711	193,029
Scrod	14,815	99	109,647	810	145,328	1,616
Haddock, salted, large					520	10
Hake, fresh:						
Large	10,005	287	33,062	789	15,465	447
Small	165,520	4,259	1,406,925	31,787	837,480	21,486
Hake, salted:						
Large					280	7
Small			1,385	22	1,680	37
Pollock, fresh	69,065	977	861,319	14,794	814,186	13,440
Pollock, salted			45	1	1,080	39
Cusk, fresh	74,450	1,950	479,205	14,424	688,601	21,508
Cusk, salted			720	13	2,260	55
Halibut, fresh	807	191	64,789	11,410	416,365	72,374
Mackerel, fresh			735,249	34,882	514,951	14,934
Mackerel, salted			387	31	16,465	458
Flounders, fresh	59,197	2,416	508,947	20,696	(1)	(1)
Swordfish, fresh			261,530	52,829	(1)	(1)
Herring, fresh			433,600	2,336	(1)	(1)
Other, fresh	50,994	1,037	814,848	16,243	2,831,890	86,561
Total, fresh	1,141,177	39,298	17,536,002	561,800	16,225,601	533,943
Total, salted			154,167	3,481	130,643	5,091
Grand total	1,141,177	39,298	17,690,169	565,281	16,356,244	539,034
Landed in 1927:						
Fresh	723,349	44,760			16,225,601	533,943
Salted					130,643	5,091
Total	723,349	44,760			16,356,244	539,034

[1] Included in "Other, fresh."

SUMMARY: BY PORTS

Species	Boston		Gloucester		Portland	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh:						
Large	25,091,098	$1,114,068	12,326,926	$459,872	2,673,201	$108,792
Market	14,780,884	390,149	2,761,885	56,538	377,401	12,711
Scrod	82,126	1,723	7,790	89	53,500	411
Cod, salted:						
Large	1,865	37	853,392	45,262	146,525	3,217
Market			140,012	5,633	5,105	197
Scrod			400	11		
Haddock, fresh:						
Large	124,787,089	4,299,361	8,904,022	209,910	8,722,779	238,886
Scrod	12,052,193	274,608	746,495	12,481	109,647	810
Haddock, salted:						
Large			8,170	425		
Scrod			70	2		
Hake, fresh:						
Large	6,501,623	180,525	384,578	7,000	33,062	789
Small	81,645	1,323	3,730	61	1,406,925	31,787
Hake, salted:						
Large	6,760	112	2,320	45		
Small			840	17	1,385	22
Pollock, fresh	3,087,336	83,649	4,083,175	75,813	861,319	14,794
Pollock, salted			8,590	174	45	1
Cusk, fresh	1,573,247	43,469	298,000	4,695	479,205	14,424
Cusk, salted			6,515	139	720	13
Halibut, fresh	3,316,262	597,042	908	214	64,789	11,410
Halibut, salted			3,520	314		
Mackerel, fresh	15,285,061	872,911	8,144,450	442,026	735,249	34,882
Mackerel, salted	19,600	1,266	68,150	4,802	387	31
Flounders, fresh	8,582,866	400,754	1,322,207	89,846	508,947	20,696
Swordfish, fresh	2,263,770	497,861	18,340	3,981	261,530	52,829
Herring, fresh	19,400	270	252,800	2,703	433,600	2,336
Herring, salted	6,000	180	1,404,564	53,289		

Landings by fishing vessels at principal New England ports, 1928—Continued

SUMMARY: BY PORTS—Continued

Species	Boston		Gloucester		Portland	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Other, fresh	848,864	$46,856	151,984	$2,358	814,848	$16,243
Total, fresh	218,353,464	8,804,569	39,407,290	1,367,587	17,536,002	561,800
Total, salted	34,225	1,595	2,496,543	110,113	154,167	3,481
Grand total	218,387,689	8,806,164	41,903,833	1,477,700	17,690,169	565,281
Landed in 1927:						
Fresh	194,876,989	7,368,440	46,055,844	1,250,262	16,225,601	533,943
Salted	63,800	3,102	6,496,696	243,673	130,643	5,091
Total	194,940,789	7,371,542	52,552,540	1,493,935	16,356,244	539,034

Species	Total, 1928		1927	
	Pounds	*Value*	*Pounds*	*Value*
Cod, fresh:				
Large	40,091,225	$1,682,732	48,317,198	$1,754,878
Market	17,920,170	459,398	12,810,651	311,903
Scrod	143,416	2,223	239,596	2,954
Cod, salted:				
Large	1,001,782	48,516	1,757,842	70,058
Market	145,117	5,830	225,409	6,630
Scrod	400	11	4,033	80
Haddock, fresh:				
Large	142,413,890	4,748,157	113,925,476	3,252,446
Scrod	12,908,335	287,899	14,617,107	278,632
Haddock, salted:				
Large	8,170	425	50,100	635
Scrod	70	2		
Hake, fresh:				
Large	6,919,263	188,314	4,953,396	134,010
Small	1,492,300	33,171	892,005	22,185
Hake, salted:				
Large	9,080	157	14,785	298
Small	2,225	39	2,440	52
Pollock, fresh	8,031,830	174,256	7,651,711	171,619
Pollock, salted	8,635	175	10,650	230
Cusk, fresh	2,350,452	62,588	2,693,225	70,588
Cusk, salted	7,235	152	33,992	786
Halibut, fresh	3,381,959	608,666	4,773,486	839,390
Halibut, salted	3,520	314	5,797	555
Mackerel, fresh	24,164,760	1,349,819	31,354,236	1,286,830
Mackerel, salted	88,137	6,099	175,655	8,717
Flounders, fresh	10,414,020	511,296	8,359,131	419,744
Swordfish, fresh	2,543,640	554,671	2,245,493	513,582
Herring, fresh	705,800	5,309	2,735,000	36,911
Herring, salted	1,410,564	53,469	4,410,436	163,825
Other, fresh	[2] 1,815,696	[2] 65,457	1,590,723	56,973
Total, fresh	275,296,756	10,733,956	257,158,434	9,152,645
Total, salted	2,684,935	115,189	6,691,139	251,866
Grand total	277,981,691	10,849,145	263,849,573	9,404,511
Landed in 1927:				
Fresh			257,158,434	9,152,645
Salted			6,691,139	251,866
Total			263,849,573	9,404,511

[2] The items under "Other" include bluebacks, 444,125 pounds, value $6,038; bonito, 40 pounds, value $10; butterfish, 110,658 pounds, value $17,677; eels, 38 pounds, value $2; "perch" or cunner, 30 pounds, value $2; rosefish, 106,027 pounds, value $1,716; salmon, 7 pounds, value $2; sea robins, 300 pounds, value $3; shad, 34,561 pounds, value $1,156; sharks, 62,488 pounds, value $1,114; skates, 22,645 pounds, value $337; smelt, 441 pounds, value $87; sturgeon, 2,614 pounds, value $578; tuna, 696 pounds, value $81; whiting, 28,846 pounds, value $791; wolffish, 466,599 pounds, value $13,827; lobster, 138 pounds, value $38; scallops, 5,894 pounds, value $1,812; livers, 368,145 pounds, value $7,715; spawn, 159,674 pounds, value $12,436; and tongues, 1,730 pounds, value $35.

BIOLOGICAL ASPECT

Paralleling the northeastern coast line of North America lies a chain of fishing grounds—a series of plateaus and ridges rising from the ocean bed to make comparatively shallow soundings. For centuries these have played a large part in feeding the nations bordering

upon the Atlantic Ocean, and the development of their resources has been a great factor in the exploration of the New World.

These grounds extend from the Flemish Cap, in 44° 06′ west longitude and 47° north latitude, marking the easternmost point of this great area, for a distance of about 2,000 miles to New York, providing an almost continuous extent of most productive fishing ground. Within this chain of grounds is the Gulf of Maine, where the chain is further extended by series of smaller grounds, and again, lying inside of these, the fishing area is increased by a very large number of smaller grounds and fishing spots situated but a short distance from the mainland. All of these banks are breeding places for the valuable cod, haddock, cusk, hake, pollock, halibut, and flounders, and each in its proper season constitutes a fishing ground where may be taken many other important species of migratory and pelagic fishes, such as mackerel and herring. Fishing vessels landing fares at Boston and Gloucester, Mass., and Portland, Me., make their catches on certain of these grounds. A discussion of the activities of these vessels during 1928 is contained in this section.

In 1928 the fishing fleet landing fares at the three New England ports numbered 405 steam, motor, and sail vessels of over 5 net tons, as measured by the United States Customs Service. These made 11,616 trips to the fishing grounds and were absent from port 48,849 days, or on the average about 4.2 days per trip. Their catches of edible fish landed at the three ports amounted to 279,795,460 pounds when the salted fish had been converted to the basis of fresh gutted fish. This does not represent the entire catch of edible fish of these vessels, for small quantities, estimated at not more than 5 per cent of their total catch, were landed at ports in New England other than these three and at New York City.

The fishing vessels landing fares at these three ports do not always operate the same type of gear throughout the year; at one season of the year a certain vessel may be outfitted as a line trawler, at another season as a purse seiner, and at still another season for swordfishing with harpoons. Thus, vessels may fish two or three types of gear during the year. In such a case the vessel is classed with others operating similar gear while it is fishing that type of gear.

From the tables it will be noted that the grand total of the number of vessels operated is exclusive of duplication and that the total number of vessels operating each type of gear is also shown.

Line trawls.—A line-trawl fishery was prosecuted by 99 vessels in 1928. These vessels made 1,851 trips to 22 main fishing grounds and were absent from port 12,768 days, or an average of about 6.9 days per trip. Their catches aggregated 77,208,237 pounds, or 28 per cent of the total landings by vessels at the three ports. Of this amount, haddock constituted 42 per cent, cod 42 per cent, hake 8 per cent, and halibut 4 per cent. Other species of importance in the catch by line trawls were cusk and pollock. Of the total catch, 30 per cent was taken in South Channel, 21 per cent on Georges Bank, 12 per cent on Browns Bank, and 10 per cent on Western Bank. Other banks on which fair quantities of fish were taken by line trawls were La Have and Jeffreys Ledge.

Hand lines.—A hand-line fishery was prosecuted by 42 vessels in 1928. These vessels made 371 trips to 10 main fishing grounds and were absent from port 2,872 days, or an average of about 7.7 days per trip. Their catches aggregated 12,993,668 pounds, or 5 per cent of the total landings by vessels at the three ports. Of this amount, cod constituted 83 per cent, haddock 7 per cent, pollock 6 per cent, and halibut 2 per cent. Only minor quantities of other species were taken by hand lines. Of the total catch 66 per cent was taken on Georges Bank, 11 per cent on Browns Bank, and 9 per cent on Nantucket Shoals. Other grounds on which fair quantities of fish were taken by hand lines are Cape Shore and Smith Channel.

Harpoons.—A fishery with harpoons was prosecuted by 80 vessels in 1928. These vessels made 236 trips to 7 main fishing grounds and were absent from port 3,788 days, or an average of 16 days per trip. Their catch amounted to 2,413,583 pounds of swordfish and 326 pounds of other fish, or a total of about 1 per cent of the total landings by vessels at the three ports. Of the total catch, 66 per cent was taken on Georges Bank. Other grounds on which considerable quantities of swordfish were taken by harpoons are Browns Bank and Cape Shore.

Otter trawls, large vessels.—A fishery with otter trawls was prosecuted by 43 vessels of 91 net tons and over in 1928. These vessels made 1,010 trips to seven main fishing grounds and were absent from port 7,789 days, or an average of 7.7 days per trip (7.5 days in 1927). This is an increase of 17 vessels over the number operated in 1927, an increase of 27 per cent in the number of trips, and an increase of 31 per cent in the number of days absent. The catch amounted to 87,497,720 pounds, or 31 per cent of the total landings by vessels at the three ports. Of the total amount, 87 per cent consisted of haddock, 7 per cent of cod, 2 per cent of flounders, 2 per cent of hake, and 2 per cent of pollock. Only minor quantities of other species were taken by large otter trawlers. Of the total catch, 56 per cent was taken on South Channel, 37 per cent on Georges Bank, and 6 per cent on Nantucket Shoals. Minor catches were made on the other grounds, where large otter trawlers fished.

It is interesting to note the comparative statistics on the landings by large otter trawlers of cod, haddock, and hake at the three ports during certain years from 1908 to 1928 upon which records are available. Haddock has always been the most important species (in volume) landed by this type of vessel. Beginning with landings of about 1,500,000 pounds in 1908, they increased steadily each year until 1920, when nearly 52,000,000 pounds were landed. The following year there was a decline to about 27,000,000 pounds. During the three years following the landings remained fairly constant around 35,000,000 pounds, then increased rapidly, until in 1928 the landings were about 76,000,000 pounds.

The landings of cod, the next important species taken by large otter trawlers, increased from about 200,000 pounds in 1908 to about 15,000,000 pounds in 1923. Since then there has been a decline, although the catch in 1928 amounted to over 6,000,000 pounds. The landings of hake by large otter trawlers began with 46,000 pounds in 1908 and increased steadily until 1928, when nearly 1,500,000 pounds were landed.

Cod, haddock, and hake landed at Boston and Glouchester, Mass., and Portland, Me., by large otter trawlers in various years

Year	Trips	Cod	Haddock	Hake	Year	Trips	Cod	Haddock	Hake
		Pounds	*Pounds*	*Pounds*			*Pounds*	*Pounds*	*Pounds*
1908	44	209, 800	1, 542, 000	46, 600	1921	346	2, 482, 833	26, 734, 893	241, 650
1909	47	159, 800	1, 719, 000	74, 400	1922	578	11, 161, 947	35, 878, 524	576, 370
1910	59	125, 850	2, 775, 000	46, 600	1923	665	14, 961, 590	35, 527, 297	471, 600
1911	178	564, 500	7, 367, 100	151, 700	1924	543	8, 231, 430	35, 197, 940	616, 853
1912	295	1, 952, 950	12, 966, 700	105, 500	1925	607	7, 309, 930	44, 034, 281	711, 212
1913	326	1, 667, 806	12, 488, 992	209, 485	1926	667	5, 203, 911	52, 405, 653	894, 885
1914	387	1, 149, 595	15, 383, 550	259, 913	1927	794	3, 982, 905	69, 237, 652	994, 730
1920	646	6, 311, 389	51, 962, 457		1928	1, 010	6, 295, 138	75, 876, 486	1,455,675

Otter trawls, medium vessels.—A fishery with otter trawls was also prosecuted by 89 vessels of 21 to 90 net tons in 1928. Medium otter trawlers are referred to by some in the fisheries as "draggers." These vessels made 1,072 trips to 12 main fishing grounds and were absent from port 6,074 days, or an average of 5.7 days per trip. Their catches aggregated 29,426,209 pounds, or 10 per cent of the total landings by vessels at the three ports. Of this amount, haddock constituted 82 per cent, flounders 9 per cent, and cod 6 per cent. Only minor quantities of other species were taken by medium otter trawlers. Of the total catch, 40 per cent was taken in South Channel, 34 per cent on Georges Bank, 17 per cent on Nantucket Shoals, 4 per cent off Chatham, and 3 per cent on shore grounds. Only minor quantities were taken on the other grounds where medium otter trawlers fished.

Otter trawls, small vessels.—A fishery with otter trawls was also prosecuted by 120 vessels of 5 to 20 net tons in 1928. Small otter trawlers are referred to by some in the fisheries as "flounder draggers." These vessels made 1,181 trips to 7 main fishing grounds and were absent from port 4,092 days, or an average of 3.5 days per trip. Their catches aggregated 11,286,971 pounds, or 4 per cent of the total landings by vessels at the three ports. Of this amount flounders constituted 46 per cent and haddock 44 per cent. Only minor quantities of other species were landed by small otter trawlers. Of the total catch, 44 per cent was taken on shore grounds, 26 per cent on Nantucket Shoals, and 17 per cent on South Channel. Only minor quantities were taken on the other grounds where small otter trawlers fished.

V–D trawls (otter trawls), large vessels.—A fishery with V–D otter trawls was prosecuted by 6 vessels of 91 net tons and over in 1928. These vessels made 30 trips to 3 main fishing grounds and were absent from port 222 days, or an average of 7.4 days per trip. Their catches aggregated 3,533,365 pounds, or 1 per cent of the total landings by vessels at the three ports. Of this amount, 93 per cent consisted of haddock; the remainder consisted principally of cod and flounders. Of the total catch, 46 per cent was made on Georges Bank, 35 per cent on Nantucket Shoals, and 19 per cent on South Channel.

V–D trawls (otter trawls), medium vessels.—A fishery with V–D otter trawls was prosecuted by 30 vessels of 21 to 90 net tons in 1928. These vessels made 324 trips to 7 main fishing grounds and were absent from port 1,966 days, or an average of 6.1 days per trip. Their catches aggregated 13,592,296 pounds, or 5 per cent of the

otal landings by vessels at the three ports. Of this amount 89 per ent consisted of haddock. The remainder of the catch was made ıp chiefly of cod, flounders, and hake. Of the total catch, 56 per ent was made on South Channel, 33 per cent on Georges Bank, and per cent on Nantucket Shoals. Only minor quantities were taken rom the other banks where these vessels fished.

Sink gill nets.—A fishery with sink gill nets was prosecuted by 40 essels in 1928. They made 3,769 trips to three main fishing grounds nd were absent from port 3,783 days, or an average of about 1 day er trip. Their catch amounted to 14,248,659 pounds, or 5 per cent f the total landings by vessels at the three ports. Of this amount, 2 per cent consisted of cod and 32 per cent of pollock. Only minor uantities of other species were taken with this type of gear. Of he total catch, 87 per cent was taken on shore grounds, 10 per cent n Jeffreys Ledge, and 3 per cent on Platts Bank.

Drift gill nets.—A fishery with drift gill nets was prosecuted by 2 vessels in 1928. They made 755 trips to three main fishing rounds and were absent from port 1,842 days, or an average of bout 2.4 days per trip. Their catch amounted to 4,588,484 pounds, r 2 per cent of the total landings by vessels at the three ports. Of his amount, 54 per cent consisted of mackerel and 46 per cent of erring, including 8,057 pounds of other fish. Of the total catch, 4 per cent, consisting almost entirely of mackerel, was taken on hore grounds; 26 per cent, consisting entirely of herring, off New-oundland; and 20 per cent, consisting entirely of herring, at Bay f Islands.

Purse seines.—A fishery with purse seines (mackerel fishery) was rosecuted by 116 vessels in 1928. They made 1,016 trips to eight ain fishing grounds and were absent from port 3,645 days, or an verage of about 3.6 days per trip. Their landings at the three New ngland ports amounted to 23,000,740 pounds, or 8 per cent of the otal landings at these ports. Of this amount, 95 per cent consisted f mackerel, 3 per cent of herring, and 2 per cent of other species of ish. Of the total, 54 per cent was taken on shore grounds, 15 per ent on Georges Bank, 12 per cent on South Channel, and 10 per ent off Chatham. Only minor quantities were taken on the other anks where these boats fished.

Scallop drags (trawls).—A fishery with scallop drags or trawls was rosecuted by one vessel in 1928. It made one trip to Boston and vas absent from port eight days. The catch consisted of 5,202 pounds f scallop meats and was taken on Georges Bank.

Summary.—In general, regular otter trawls were the most important ear used by the New England vessels, catching 45 per cent of the otal landings by vessels at the three ports. Line trawls were next n importance, catching 28 per cent of the total. Purse seines caught per cent, gill nets 7 per cent, V–D otter trawls 6 per cent, hand nes 5 per cent, and harpoons and scallop drags combined 1 per cent.

Among the fishing grounds South Channel was most important, urnishing 35 per cent of the fish caught by the vessels. Georges ank, which is near South Channel, was second, furnishing 28 per ent. Shore grounds furnished 12 per cent, Nantucket Shoals 7 per ent, and Browns Bank 4 per cent. All of these are grounds off the nited States. The catch on any one of the other banks where

fishing was prosecuted by the vessels furnished less than 10,000,000 pounds each.

The fishery products landed at the three ports by vessels are taken chiefly on fishing grounds off the United States west of 66° W. longitude. In 1928 these grounds furnished 92 per cent of the total landings at the three ports.

Those fishing grounds off Canadian Provinces east of 66° W. longitude furnished 6 per cent, while those off Newfoundland, also east of 66° W. longitude, furnished 2 per cent. The large catch on grounds off the United States is due chiefly to the large catches by otter trawlers on South Channel, Georges Bank, and Nantucket Shoals, which fishing grounds are suited to fishing with this type of gear and which are comparatively near packing centers. Compared with 1927, there was an increase of 7 per cent in the landings of fish taken on grounds off the United States, a decrease of 9 per cent in the landings of fish taken off Canadian Provinces, and a decrease of 42 per cent in the landings of fish taken off Newfoundland.

Landings by fishing vessels at Boston and Gloucester, Mass., and Portland, Me., 1928

BY GEAR AND FISHING GROUNDS

Gear and fishing grounds	Vessels fishing	Trips	Days absent	Cod			Haddock		Hake	
				Large	Market	Scrod	Large	Scrod	Large	Small
Line trawls:	*Number*	*Number*	*Number*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Grand Bank	14	34	905	467,570	32,669		28,000		5,750	
Green Bank	4	8	217	70,827	12,770		150		5,655	
St. Peters Bank	8	17	400	30,100	5,662				200	860
Labrador coast	1	1	29							
Gulf of St. Lawrence	3	4	111	29,127	24,094					
Quereau Bank	6	10	219	72,259	4,139				10,997	1,680
The Gully	2	3	64							
Western Bank (Sable Island Bank)	19	68	1,130	5,025,925	1,648,365		1,029,755		13,660	
Cape Shore	13	15	151	233,285	177,460		292,300	1,000	30,590	
La Have Bank	23	69	905	2,002,911	958,306	3,230	2,188,020	8,125	85,491	514
Browns Bank	33	120	1,254	2,595,237	1,229,026	3,102	4,482,585	2,000	119,050	
Georges Bank	57	279	2,762	8,564,059	629,963	3,000	5,905,875	51,270	133,195	135
South Channel	48	445	2,550	3,640,935	3,061,121	3,480	12,478,277	29,170	3,238,675	45,895
Off Chatham	8	11	55	42,808	46,960	400	278,885		28,250	
Nantucket Shoals	8	9	49	47,150	27,205		168,600	2,400	40,540	
Cashes Bank	19	40	187	222,077	68,494	2,995	301,975	5,505	105,057	21,647
Fippenies Bank	13	19	67	77,820	29,465	1,250	172,965	6,420	111,160	7,025
Platts Bank	9	56	121	73,365	24,839	8,967	356,156	12,705	4,050	262,690
Jeffreys Ledge	39	373	904	329,194	185,363	31,408	2,738,027	88,378	392,110	728,624
Tillies Bank	2	2	6	4,795	1,480	530	28,235	575		16,330
Middle Bank (Steinwagen Bank)	14	54	203	76,061	42,575	2,380	789,449	4,450	303,215	22,000
Shore, general	32	214	479	105,709	84,375	12,665	848,680	24,756	24,055	131,509
Total	[1] 99	1,851	12,768	23,711,214	8,294,331	73,407	32,087,934	236,754	4,651,698	1,238,309
Hand lines:										
Grand Bank	1	1	22							
Cape Shore	10	26	239	310,527	379,735	4,375	30,871	1,950	630	
La Have Bank	2	2	18	30,550	13,600		2,600			
Browns Bank	16	32	237	663,545	470,920	160	150,350		5,600	
Georges Bank	24	224	1,825	4,415,725	2,888,537	2,950	573,110	10,040	3,940	
South Channel	10	16	93	258,377	202,655		97,650		2,700	
Nantucket Shoals	15	59	388	383,045	744,740	1,350	58,955	3,230	3,250	
Cashes Bank	1	1	6	4,300	2,900		7,200		2,700	
Jeffreys Ledge	1	1	4	200						
Shore, general	8	9	40	13,580	19,327	360	31,445	85	8,450	205
Total	[1] 42	371	2,872	6,079,849	4,722,414	9,195	952,181	15,305	27,270	205

[1] Exclusive of duplication.

Landings by fishing vessels at Boston and Gloucester, Mass., and Portland, Me., 1928—Continued

BY GEAR AND FISHING GROUNDS—Continued

Gear and fishing grounds	Vessels fishing	Trips	Days absent	Cod			Haddock		Hake	
				Large	Market	Scrod	Large	Scrod	Large	Small
	Number	*Number*	*Number*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Harpoons:										
Western Bank (Sable Island Bank)	1	1	15							
Cape Shore	27	27	595							
Browns Bank	39	48	662							
Georges Bank	73	144	2,308							
South Channel	1	1	15							
Nantucket Shoals	8	9	105							
Shore, general	5	6	88							
Total	1 80	236	3,788							
Otter trawls, large:										
Western Bank (Sable Island Bank)	2	2	19	5,000	5,300		199,000	11,500	250	
Browns Bank	1	1	9	2,480	680		47,000		2,800	
Georges Bank	34	325	2,534	1,515,456	1,265,701	15,070	24,774,916	3,417,620	260,240	
South Channel	38	612	4,724	1,810,806	1,415,555	14,865	37,272,026	4,501,605	1,144,170	1,325
Off Chatham	3	3	18	5,300	5,020		211,400	39,100	1,750	
Nantucket Shoals	25	60	457	110,700	111,300	2,425	4,785,169	471,195	45,060	
Shore, general	3	7	28	6,050	3,430		144,955	1,000	80	
Total	1 43	1,010	7,789	3,455,792	2,806,986	32,360	67,434,466	8,442,020	1,454,350	1,325
Otter trawls, medium:										
La Have Bank	2	2	25	7,600	1,700		61,200	500	475	
Browns Bank	1	1	14	13,900			2,000		600	
Georges Bank	52	277	1,858	296,410	276,520	2,280	7,804,415	1,040,985	53,310	
Clarks Bank	4	8	47	5,825	5,100		263,870	29,185	3,775	
South Channel	50	393	2 390	306,198	370,900	2,340	9,096,281	1,007,285	177,424	3,405
Off Chatham	16	41	220	33,630	23,905	1,230	773,820	101,360	19,885	
Nantucket Shoals	36	144	865	85,187	444,590	1,441	3,448,420	267,548	17,725	
Cashes Bank	1	3	14	4,150	2,550		14,270	6,500	10,080	
Jeffreys Ledge	3	4	10	1,750	1,015	260	31,050	2,550	3,805	
Middle Bank (Stellwagen Bank)	1	1	3	340	145		2,670			
Off Race Point	1	1	2	200	75		1,485	245	550	
Shore, general	44	197	626	17,165	15,410	840	278,745	32,067	27,945	1,240
Total	1 89	1,072	6,074	772,355	1,141,910	8,391	21,778,226	2,488,225	315,574	4,645
Otter trawls, small:										
Georges Bank	19	40	270	14,025	39,095	480	630,590	75,120	7,845	
South Channel	16	83	451	45,825	88,715	300	1,393,189	95,235	35,510	320
Off Chatham	7	18	94	8,880	7,615		230,195	19,420	7,960	
	38	136	708	35,455	394,050	2,475	1,383,630	29,825	4,251	

Jeffreys Ledge	3	3	17	505	325		24,600	785	1,895	
Middle Bank (Stellwagen Bank)	5	7	21	5,425	4,770	130	35,315	1,165	1,100	
Shore, general	101	894	2,531	117,009	111,151	2,770	983,282	33,848	85,780	34,735
Total	[1] 120	1,181	4,092	227,124	645,721	6,155	4,680,801	255,398	144,341	35,065
V-D trawls, large:										
Georges Bank	4	11	76	58,645	11,890	400	1,277,975	219,845	1,230	
South Channel	5	9	71	11,405	17,800	12,200	532,440	52,175	6,380	
Nantucket Shoals	2	10	75	4,815	13,280		1,166,150	40,135	1,500	
Total	[1] 6	30	222	74,865	42,970	12,600	2,976,565	312,155	9,110	
V-D trawls, medium:										
Georges Bank	19	89	585	132,630	112,050	340	3,562,066	475,585	24,490	
Clarks Bank	1	3	21	3,275	2,425		90,300	28,350	2,500	
South Channel	17	186	1,145	170,345	189,155	330	6,310,351	561,965	121,435	
Off Chatham	2	4	20	1,395	1,310		79,050	6,205	3,300	
Nantucket Shoals	11	27	148	18,800	128,885		903,745	78,630	7,845	
Jeffreys Ledge	2	3	7	690	95		2,455		1,315	
Shore, general	7	12	40	1,040	1,030		50,735	7,400	2,640	
Total	[1] 30	324	1,966	328,175	434,950	670	10,998,702	1,158,135	163,525	
Sink gill nets:										
Platts Bank	4	75	75	246,820	2,543		1,770		1,680	25,902
Jeffreys Ledge	7	290	291	743,994	29,436	235	149,964		3,700	88,354
Shore, general	40	3,404	3,417	6,354,331	80,439	1,195	1,370,112	490	166,175	102,939
Total	[1] 40	3,769	3,783	7,345,145	112,418	1,430	1,521,846	490	171,555	217,195
Drift gill nets:										
Off Newfoundland	3	3	116							
Bay of Islands	2	2	82							
Shore, general	78	750	1,644							
Total	[1] 82	755	1,842							
Purse seines:										
Cape Shore	6	6	46							
Georges Bank	45	91	351							
South Channel	64	105	408							
Off Chatham	62	157	564							
Nantucket Shoals	20	25	106							
Jeffreys Ledge	5	9	17							
Middle Bank (Stellwagen Bank)	35	51	233							
Shore, general	110	572	1,920							
Total	[1] 116	1,016	3,645							
Scallop drags:										
Georges Bank	1	1	8							
Grand total	[1] 405	11,616	48,849	41,994,519	18,201,700	144,208	142,430,721	12,908,482	6,937,423	1,496,744

[1] Exclusive of duplication.

NOTE.—Otter trawls and V-D trawls are classified according to the size of the vessel. The weight of salt fish landed has been converted to the basis of fresh fish.

Landings by fishing vessels at Boston and Gloucester, Mass., and Portland, Me., 1928—Continued

BY GEAR AND FISHING GROUNDS

Gear and fishing grounds	Pollock	Cusk	Halibut	Flounders	Swordfish	Mackerel	Herring	Other	Total
Line trawls:	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Grand Bank	200	860	990, 874		24, 564				1, 550, 487
Green Bank	208	510	223, 979		117				314, 216
St. Peters Bank			498, 259						535, 081
Labrador coast			46, 365						46, 365
Gulf of St. Lawrence			102, 972						156, 193
Quereau Bank	275	9, 800	189, 769		3, 754				292, 673
The Gully			44, 073						44, 073
Western Bank (Sable Island Bank)	77, 955	34, 185	51, 891		171			400	7, 882, 307
Cape Shore	31, 560	22, 985	2, 560		3, 185			3, 800	798, 725
La Have Bank	84, 066	169, 902	87, 869		3, 943			3, 970	5, 596, 347
Browns Bank	106, 525	434, 220	164, 792		11, 538			34, 312	9, 182, 387
Georges Bank	133, 568	275, 536	422, 554	30, 745	53, 767			5, 465	16, 209, 132
South Channel	470, 011	400, 910	109, 444	4, 907	102	700		39, 612	23, 523, 239
Off Chatham	4, 595	14, 085	1, 119					1, 885	418, 987
Nantucket Shoals	10, 200	27, 450	22, 995	4, 135				425	351, 100
Cashes Bank	22, 272	194, 110	15, 392	480				9, 020	969, 024
Fippenies Bank	7, 490	33, 760	1, 443					2, 090	450, 888
Platts Bank	14, 251	67, 345	774	250				40, 015	864, 807
Jeffreys Ledge	100, 600	425, 112	5, 425	10, 967				187, 231	5, 222, 439
Tillies Bank	695	2, 800						4, 138	59, 578
Middle Bank (Stellwagen Bank)	20, 380	54, 940	1, 731	1, 050				3, 965	1, 322, 194
Shore, general	16, 737	84, 681	34, 860	10, 679				39, 289	1, 417, 995
Total	1, 101, 588	2, 253, 191	3, 019, 140	63, 213	101, 141	700		375, 617	77, 208, 237
Hand lines:									
Grand Bank			42, 159						42, 159
Cape Shore	160, 985	10, 730	2, 038	140	104			10, 585	912, 670
La Have Bank	1, 680	100	111					175	48, 816
Browns Bank	90, 030	22, 745	8, 625	685	4, 070			21, 403	1, 438, 133
Georges Bank	481, 204	29, 135	130, 908		6, 943			26, 590	8, 569, 082
South Channel	32, 445	1, 350	25, 968		1, 833			994	623, 972
Nantucket Shoals	23, 975		6, 362	6, 280				1, 400	1, 232, 587
Cashes Bank	2, 500	2, 000	56						21, 656
Jeffreys Ledge	7, 650								7, 850
Shore, general	21, 500	300	61	1, 295				135	96, 743
Total	821, 969	66, 360	216, 288	8, 400	12, 950			61, 282	12, 993, 668
Harpoons:									
Western Bank (Sable Island Bank)					410				410
Cape Shore					133, 177			326	133, 503
Browns Bank					562, 371				562, 371

Georges Bank					1,591,731				1,591,731
South Channel					26,884				26,884
Nantucket Shoals					65,812				65,812
Shore, general					33,198				33,198
Total					2,413,583			326	2,413,909
Otter trawls, large:									
Western Bank (Sable Island Bank)	650		574	1,800				2,200	226,274
Browns Bank	800		185	1,760					55,705
Georges Bank	253,791	2,820	33,759	572,976				62,210	32,174,559
South Channel	1,111,990	13,770	81,182	1,278,108		745	1,400	263,135	48,910,682
Off Chatham	1,330		401	1,680				140	266,121
Nantucket Shoals	19,360		6,077	116,805				33,676	5,701,767
Shore, general	75	55	217	6,750					162,612
Total	1,387,996	16,645	122,395	1,979,879		745	1,400	361,361	87,497,720
Otter trawls, medium:									
La Have Bank	135	6,400	795	3,685				780	83,270
Browns Bank	400		843						17,743
Georges Bank	22,355	130	4,369	623,555	1,314	117		20,311	10,146,071
Clarks Bank	160		310	15,285				715	324,225
South Channel	21,955	452	8,583	668,298	1,121	80		48,603	11,712,925
Off Chatham	1,748		1,726	62,645				26,730	1,046,679
Nantucket Shoals	6,585		2,104	736,537				10,510	5,020,647
Cashes Bank	700	5,400	162						43,812
Jeffreys Ledge	280	975		950				1,725	44,360
Middle Bank (Stellwagen Bank)				2,140					5,295
Off Race Point	6,250			840					9,645
Shore, general	3,015	3,125	918	578,722		255		12,090	971,537
Total	63,583	16,482	19,810	2,692,657	2,435	452		121,464	29,426,209
Otter trawls, small:									
Georges Bank	1,640		873	162,808	11,286			2,645	946,407
South Channel	2,715		1,635	218,982				13,141	1,895,577
Off Chatham	705		361	33,775				12,357	321,268
Nantucket Shoals	6,295		265	1,138,675				3,190	2,998,111
Jeffreys Ledge	50			2,680				60	30,900
Middle Bank (Stellwagen Bank)	990			22,757				1,615	73,267
Shore, general	6,332	4,320	432	3,579,727				62,055	5,021,441
Total	18,727	4,320	3,566	5,159,404	11,286			95,063	11,286,971
V-D trawls, large:									
Georges Bank	1,155		1,197	32,745				13,950	1,619,032
South Channel	5,725		424	22,915				10,932	672,396
Nantucket Shoals	230			13,720				2,107	1,241,937
Total	7,110		1,621	69,380				26,989	3,533,365

Landings by fishing vessels at Boston and Gloucester, Mass, and Portland, Me., 1928—Continued

Gear and fishing grounds	Pollock	Cusk	Halibut	Flounders	Swordfish	Mackerel	Herring	Other	Total
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
V-D trawls, medium:									
Georges Bank	3,805	500	2,615	144,180	162	110		7,371	4,465,904
Clarks Bank			35	3,900				885	131,670
South Channel	12,800	805	3,043	210,200	2,023	83		25,493	7,608,088
Off Chatham	200			4,865				1,980	98,305
Nantucket Shoals	7,600	50	64	43,985				4,250	1,193,854
Jeffreys Ledge	35			2,675					7,265
Shore, general			60	22,855				1,450	87,210
Total	24,440	1,355	5,817	432,660	2,245	193		41,429	13,592,296
Sink gill nets:									
Platts Bank	58,540	160						27,203	364,618
Jeffreys Ledge	347,740	1,630	11	880				71,061	1,437,005
Shore, general	4,217,389	4,694	351	7,547		69,550		71,824	12,447,036
Total	4,623,669	6,484	362	8,427		69,550		170,088	14,248,659
Drift gill nets:									
Off Newfoundland							1,180,710		1,180,710
Bay of Islands							926,136		926,136
Shore, general						2,473,581		8,057	2,481,638
Total						2,473,581	2,106,846	8,057	4,588,484
Purse seines:									
Cape Shore						272,500			272,500
Georges Bank						3,532,732		235	3,532,967
South Channel						2,774,375		8,000	2,782,375
Off Chatham						2,152,496		46,610	2,199,106
Nantucket Shoals						848,970		1,200	850,170
Jeffreys Ledge						17,844	8,400	111,339	137,583
Middle Bank (Stellwagen Bank)						603,172	91,600	53,400	748,172
Shore, general						11,536,433	613,400	328,034	12,477,867
Total						21,738,522	713,400	548,818	23,000,740
Scallop drags:									
Georges Bank								5,202	5,202
Grand total	8,049,082	2,364,837	3,388,999	10,414,020	2,543,640	24,283,743	2,821,646	1,815,696	279,795,460

NOTE.—Otter trawls and V-D trawls are classified according to the size of the vessel. The weight of salt fish landed has been converted to the basis of fresh fish.

SUMMARY: BY FISHING GROUNDS

Fishing grounds	Vessels fishing	Trips	Days absent	Cod			Haddock		Hake	
				Large	Market	Scrod	Large	Scrod	Large	Small
East of 66° W. longitude										
Off Newfoundland:	*Number*	*Number*	*Number*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Grand Bank	14	35	927	467,570	32,669		28,000		5,750	
Green Bank	4	8	217	70,827	12,770		150		5,655	
St. Peters Bank	8	17	400	30,100	5,662				200	860
Bay of Islands	2	2	82							
Off Newfoundland	3	3	116							
Total	[1] 21	65	1,742	568,497	51,101		28,150		11,605	860
Off Canada:										
Labrador coast	1	1	29							
Gulf of St. Lawrence	3	4	111	29,127	24,094					
Quereau Bank	6	10	219	72,259	4,139				10,997	1,680
The Gully	2	3	64							
Western Bank (Sable Island Bank)	21	71	1,164	5,030,925	1,653,665		1,228,755	11,500	13,910	
Cape Shore	51	74	1,031	543,812	557,195	4,375	323,171	2,950	31,220	
La Have Bank	24	73	948	2,041,061	973,606	3,230	2,251,820	8,625	85,966	514
Total	[1] 81	236	3,566	7,717,184	3,212,699	7,605	3,803,746	23,075	142,093	2,194
West of 66° W. longitude										
Off United States:										
Browns Bank	85	202	2,176	3,275,162	1,700,626	3,262	4,681,935	2,000	128,050	
Georges Bank	241	1,481	12,577	14,996,950	5,223,756	24,520	44,528,947	5,290,465	484,250	135
Clarks Bank	5	11	68	9,100	7,525		354,170	57,535	6,275	
South Channel	201	1,850	11,847	6,243,891	5,345,901	33,515	67,180,214	6,247,435	4,726,294	50,955
Off Chatham	92	234	971	92,013	84,810	1,630	1,573,350	166,085	61,145	
Nantucket Shoals	143	479	2,901	685,152	1,864,050	7,691	11,914,669	892,963	120,171	
Cashes Bank	20	44	207	230,527	73,944	2,995	323,445	12,005	117,837	21,647
Fippenies Bank	13	19	67	77,820	29,465	1,250	172,965	6,420	111,160	7,025
Platts Bank	13	131	196	320,185	27,382	8,967	357,926	12,705	5,730	287,992
Jeffreys Ledge	58	683	1,250	1,076,333	216,234	31,903	2,946,096	91,713	402,825	816,978
Tillies Bank	2	2	6	4,795	1,480	536	28,235	575		16,330
Middle Bank (Stellwagen Bank)	54	113	460	81,826	47,490	2,510	827,434	5,615	304,313	22,000
Off Race Point	1	1	2	200	75		1,485	245	550	
Shore, general	265	6,065	10,813	6,614,884	315,162	17,830	3,707,954	99,646	315,125	270,628
Total	[1] 399	11,315	43,541	33,708,838	14,937,900	136,603	138,598,825	12,885,407	6,783,725	1,493,690
Grand total	[1] 405	11,616	48,849	41,994,519	18,201,700	144,208	142,430,721	12,908,482	6,937,423	1,496,744

[1] Exclusive of duplication.

Landings by fishing vessels at Boston and Gloucester, Mass., and Portland, Me., 1928—Continued

SUMMARY: By fishing grounds—Continued

Fishing grounds	Pollock	Cusk	Halibut	Flounders	Swordfish	Mackerel	Herring	Other	Total
East of 66° W. longitude									
Off Newfoundland:	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Grand Bank	200	860	1,032,033		24,564				1,592,646
Green Bank	208	510	223,979		117				314,216
St Peters Bank			498,259						535,081
Bay of Islands							926,136		926,136
Off Newfoundland							1,180,710		1,180,710
Total	408	1,370	1,755,271		24,681		2,106,846		4,548,789
Off Canada:									
Labrador coast			46,365						46,365
Gulf of St. Lawrence			102,972						156,193
Quereau Bank	275	9,800	189,769		3,754				292,673
The Gully			44,073						44,073
Western Bank (Sable Island Bank)	78,605	34,185	52,465	1,800	581			2,600	8,108,991
Cape Shore	192,545	33,715	4,598	140	136,466	272,500		14,711	2,117,398
La Have Bank	85,881	176,402	88,775	3,685	3,943			4,925	5,728,433
Total	357,306	254,102	529,017	5,625	144,744	272,500		22,236	16,494,126
West of 66° W. longitude									
Off United States:									
Browns Bank	197,755	456,965	174,445	2,445	577,979			55,715	11,256,339
Georges Bank	897,518	308,121	596,275	1,567,009	1,665,203	3,532,959		143,979	79,260,087
Clarks Bank	160		345	19,185				1,600	455,895
South Channel	1,657,641	417,287	230,279	2,403,410	32,023	2,775,983	1,400	409,910	97,756,138
Off Chatham	8,578	14,085	3,607	102,965		2,152,496		89,702	4,350,466
Nantucket Shoals	74,245	27,500	37,867	2,060,137	65,812	848,970		56,758	18,655,985
Cashes Bank	25,472	201,510	15,610	480				9,020	1,034,492
Fippenies Bank	7,490	33,760	1,443					2,090	450,888
Platts Bank	72,791	67,505	774	250				67,218	1,229,425
Jeffreys Ledge	456,355	427,717	5,436	18,152		17,844	8,400	371,416	6,887,402
Tillies Bank	695	2,800						4,138	59,578
Middle Bank (Stellwagen Bank)	21,370	54,940	1,731	25,947		603,172	91,600	58,980	2,148,928
Off Race Point	6,250			840					9,645
Shore, general	4,265,048	97,175	36,899	4,207,575	33,198	14,079,819	613,400	522,934	35,197,277
Total	7,691,368	2,109,365	1,104,711	10,408,395	2,374,215	24,011,243	714,800	1,793,460	258,752,545
Grand total	8,049,082	2,364,837	3,388,999	10,414,020	2,543,640	24,283,743	2,821,646	1,815,696	279,795,460

NOTE.—The weight of salt fish landed has been converted to the basis of fresh fish.

Days' absence from port of fishing vessels landing fish at Boston and Gloucester, Mass., and Portland, Me., 1928

Fishing grounds	Jan.	Feb.	Mar.	Apr.	May	June	July
Off Newfoundland:							
Grand Bank	7			142	190	165	105
Green Bank			44	34	76		
St. Peters Bank		107	114	131		48	
Off Newfoundland	116						
Total	123	107	158	307	266	213	105
Off Canada:							
Gulf of St. Lawrence					54	22	
Quereau Bank				64	52		
The Gully			32		32		
Western Bank (Sable Island Bank)				28	518	304	191
Cape Shore						46	
La Have Bank	127	9		102	38	35	102
Total	127	9	32	194	694	407	293
Off United States:							
Browns Bank	185	32	57	212	138	30	517
Georges Bank	449	815	1,499	954	872	1,019	2,322
Clarks Bank	7			29	10		
South Channel	1,119	1,101	808	581	403	701	1,177
Off Chatham	8	85	67	126	42	26	108
Nantucket Shoals	30	36	109	361	810	206	132
Cashes Bank	43	19	17	11	45	7	
Fippenies Bank	26		3	2			
Platts Bank	4						22
Jeffreys Ledge	123	94	126	19	43	68	57
Middle Bank (Stellwagen Bank)	3	10	26	23	6	8	36
Shore, general	570	666	1,078	912	1,107	1,636	501
Total	2,567	2,858	3,790	3,230	3,476	3,701	4,872
Grand total	2,817	2,974	3,980	3,731	4,436	4,321	5,270

Fishing grounds	Aug.	Sept.	Oct.	Nov.	Dec.	Total
Off Newfoundland:						
Grand Bank	191	24	52		51	927
Green Bank	43	20				217
St. Peters Bank						400
Bay of Islands					82	82
Off Newfoundland						116
Total	234	44	52		133	1,742
Off Canada:						
Labrador coast		29				29
Gulf of St. Lawrence	35					111
Quereau Bank		59	5	39		219
The Gully						64
Western Bank (Sable Island Bank)		125				1,164
Cape Shore	91	530	207	133	24	1,031
La Have Bank	124	88	178	108	37	948
Total	250	829	390	280	61	3,566
Off United States:						
Browns Bank	564	30	[illegible]	86	265	2,176
Georges Bank	1,420	556	1,023	792	856	12,577
Clarks Bank		7	5	10		68
South Channel	1,135	1,256	947	1,427	1,192	11,847
Off Chatham	392	78		13	26	971
Nantucket Shoals	168	164	507	150	228	2,901
Cashes Bank			24	4	37	207
Fippenies Bank				3	33	67
Platts Bank	49	2	71	29	19	196
Jeffreys Ledge	40	122	111	234	213	1,250
Tillies Bank				6		6
Middle Bank (Stellwagen Bank)	72	113	48	45	70	460
Off Race Point					2	2
Shore, general	470	489	1,103	1,668	613	10,813
Total	4,310	2,817	3,899	4,467	3,554	43,541
Grand total	4,794	3,690	4,341	4,747	3,748	48,849

ATLANTIC MACKEREL FISHERY

The 1928 Atlantic mackerel fishery of the United States resembled that of the previous year, with heavy southern and Block Island runs in the spring followed by a slack season in the Gulf of Maine during the summer and autumn. An unusual run of large mackerel appeared off Cape Ann and lasted well into December. Altogether the season's catch, amounting to nearly 31,000,000 pounds, was about 25.5 per cent below that of the previous year.

A statistical summary of the fishery appears in the accompanying table. This statement differs from last year's presentation in making a distinction between vessels fishing regularly during the specified subdivision of the season and those fishing only a fraction of the time. This year's statistics also show separately the catch in the south and that in the Block Island region. These were shown together as "south and west of Cape Cod" in last year's report. These changes have been introduced for the purpose of making a more accurate appraisal of the results of the fishery in terms of fishing effort. As heretofore, only the vessel fishery has been included, and the purse-seiners are listed separately under "seiners" and the drift gill-netters under "netters." The statistics were largely collected by the bureau's agents at Cape May, N. J., New York City, Boston, Gloucester, and Woods Hole, Mass., and Portland, Me. Data on landings at other ports were secured from unofficial sources and may be partially incomplete, but the error due to this is estimated to be well under 5 per cent. The miscellaneous shore fisheries are not included in this report; nor is the catch of bulls-eye mackerel, another species, though they were unusually plentiful this year, 935,675 pounds being caught in the vessel fishery.

Mackerel vessel fishery, 1928

Designation	Vessels	Tonnage	Crew	Trips	Catch		
					Medium and large	Small	Total
Southern fishery:							
Seiners—	*Number*	*Net tons*	*Number*	*Number*	*Pounds*	*Pounds*	*Pounds*
Regular	47	1,956	582	317	5,643,464		5,643,464
Miscellaneous				39	549,275		549,275
Netters—							
Regular	21	398	140	135	988,094		988,094
Miscellaneous				50	227,843		227,843
Total				541	7,408,676		7,408,676
Block Island fishery:							
Seiners—							
Regular	50	1,865	600	245	7,370,131	6,500	7,376,631
Miscellaneous				51	1,008,775		1,008,775
Netters—							
Regular	12	244	86	22	205,504		205,504
Miscellaneous				62	263,615		263,615
Total					8,848,025	6,500	8,854,525
Gulf of Maine fishery:							
Seiners—							
Regular	60	2,296	729	556	9,195,872	1,405,735	10,601,607
Miscellaneous				119	1,115,299	207,773	1,323,072
Netters—							
Regular, Spring	13	142	72	87	325,720		325,720
Regular, Fall	50	1,082	351	676	1,812,659		1,812,659
Miscellaneous, Spring				51	211,145		211,145
Miscellaneous, Fall				100	133,270		133,270
Total				1,470	12,793,965	1,613,508	14,407,473
Cape Shore fishery: Seiners	7	381	87	7	313,210		313,210
Total seiners				1,334	25,196,026	1,620,008	26,816,034
Total netters				1,183	4,167,850		4,167,850
Grand total				2,517	29,363,876	1,620,008	30,983,884

This special section on the mackerel fishery is an outgrowth of the cooperative program of the divisions of fishery industries and scientific inquiry for the study of the mackerel, in which the statistics of the fishery and the bionomics of the species are being investigated simultaneously. This scheme has already borne fruit in a practical way by providing a sufficient understanding of the principal causes of fluctuation in abundance. In advance of the 1928 season a trial prediction was made public, in which it was estimated that the catch would fall off 12.5 per cent or more as compared with the previous year. Thus, the outlook was a catch under 37,000,000 pounds. The actual realization—31,000,000 pounds—approached encouragingly near the estimated figure, and a continuation of this work promises to obviate much of the uncertainty that now attends this erratic fishery.

Southern fishery.—This area includes the entire region west of 72° W. longitude, which passes through the eastern end of Long Island about 9 miles west of Montauk Point. This roughly includes all waters off New York, New Jersey, Delaware, Maryland, and Virginia. Most of the vessels participating in this fishery sailed during the first week in April. Fish were sighted on the 8th and 9th of the month, and the first landings of significant amounts were made at Cape May on April 12. Most of the seiners continued to operate in this area until about May 25. Altogether, 47 vessels participated regularly, catching a total of over 5,600,000 pounds. An additional 500,000 pounds was caught by vessels fishing less continuously. From the figures given in the above table it may be calculated that the average vessel measured 41 net tons, carried a crew of 12, made about seven trips, and caught about 120,000 pounds of mackerel.

The netters in the southern fishery sailed later than the seiners, and most of them landed fish from April 28 to May 30. The total catch by netters was about 1,200,000 pounds. The average regular netter measured 19 net tons, carried a crew of 7, made about 6 trips, and caught about 47,000 pounds of mackerel.

Block Island fishery.—In this area we have included all waters between 72° W. longitude, near Montauk Point on the eastern end of Long Island, and a line drawn 145° from true north from Sankaty Head, Nantucket, thus including the area south of the southern shore of New England (mackerel are not commonly found in Long Island Sound). The fishery shifted from the south to this region about May 25 and lasted until about July 1. Although the season was only a little over half as long and the regular fleet approximately the same size as in the south, the catch—8,848,025 pounds—was somewhat larger than in the southern fishery. The average seiner measured 37 net tons, carried 12 men, made about 5 trips, and caught 147,000 pounds of mackerel. The netters fished a very short time in this area (May 17 to June 30), and average figures on their performance have little significance.

Gulf of Maine fishery.—This includes all of the inshore and offshore waters of the Gulf of Maine from Nantucket Shoals to Nova Scotia. Most of the mackerel fishing was done off the eastern shore of Cape Cod and Nantucket, with Massachusetts Bay as a secondary center of the fishery. Very few mackerel were taken in the northern half of the gulf. The seining season lasted from about July 1 to November 1, and the fishing in general was very poor after the month of July. Large mackerel were reported plentiful but in scattered schools,

swimming deep and hard to set around. Small mackerel ("blink" size, about one-half pound each) were abundant for the first time since 1924, and though ordinarily in poor demand the scarcity of large mackerel made them salable, and a total catch of 1,600,000 pounds of these was landed by the seiners. Toward the end of the season a few trips were made in the Block Island area. In the interest of simplicity these were included as of the Gulf of Maine fishery. This fall the Block Island catch amounted to 31 trips landing 215,175 pounds of medium and large mackerel and 176,675 pounds of small mackerel.

Sixty seiners participated in the Gulf of Maine fishery. On the average they measured 38 net tons, carried 12 men, and made 9 trips, catching about 177,000 pounds during the season.

In the Gulf of Maine the netting season was divided naturally into two parts—spring and fall. During the former season—May 28 to July 16—only a few vessels fished regularly, but the fall run was of unusual magnitude and many seiners changed over to netting, so that during the period October 21 to December 11 there were 50 netters fishing regularly. On the average they measured 22 net tons, carried 7 men, made 13 trips, and caught about 36,000 pounds.

Cape Shore fishery.—A little more interest was shown in the Cape Shore fishery in 1928 than during the previous year, though it was still insignificant compared with years just prior to 1927. In all, 7 vessels fished off Nova Scotia during the early part of June, making one trip and catching about 44,500 pounds each.

Mackerel vessel-fishery catch 1905–1928

Year	Pounds [1]	Year	Pounds [1]
1905	15,398,070	1917	25,473,540
1906	8,106,960	1918	13,915,200
1907	16,902,270	1919	9,990,690
1908	14,376,990	1920	13,292,040
1909	11,702,190	1921	6,923,790
1910	3,909,150	1922	8,797,680
1911	8,322,060	1923	23,390,580
1912	7,011,240	1924	18,237,120
1913	9,327,330	1925	33,953,490
1914	14,477,970	1926	47,126,100
1915	16,051,170	1927	41,998,600
1916	20,642,580	1928	30,983,880

[1] Represents the weight of mackerel landed in the round plus the weight of mackerel landed salted, which has been converted to the equivalent of fresh mackerel in the round.

FISHERIES OF CONNECTICUT [3]

There were 944 fishermen employed in the vessel and boat fisheries of Connecticut in 1927, who fished for products other than clams, oysters, and scallops. Their catch amounted to 20,544,754 pounds, valued at $918,820. This is an increase of 42 per cent in amount and 26 per cent in the value as compared with the catch and value of corresponding products in 1926. Of the total value of the catch, that for flounders accounted for 35 per cent, lobsters 28 per cent, haddock 14 per cent, and menhaden 8 per cent.

Operating units.—The catch of fishery products was taken by 944 fishermen, who used 277 rowboats, 353 motor boats and vessels, 7 steam vessels, and 15 types of major fishing apparatus.

[3] Exclusive of the clam, oyster, and scallop fisheries. These statistics were collected by a representative of the State of Connecticut.

Catch by gear.—Two types of gear accounted for 90 per cent of the products taken in the commercial fisheries of Connecticut during 1927. Otter trawls and flounder drags were the most important of these gears, accounting for 49 per cent of the catch. Purse seines accounted for 41 per cent. The catch by otter trawls and flounder drags consisted principally of flounders and haddock. The catch by purse seines was exclusively menhaden and mackerel.

Fisheries by counties.—Fishing was prosecuted in the marine waters of 5 counties in Connecticut in 1927. Ranked according to value, the fisheries of New London County were by far the most important, accounting for 96 per cent of the total catch and 85 per cent of the total value of the catch. New Haven County ranked second, accounting for 1 per cent of the total catch and 6 per cent of the total value. Fairfield and Middlesex Counties each accounted for catches valued at nearly $40,000.

Fisheries of Connecticut,[1] *1927*

OPERATING UNITS: BY GEAR

Items	Haul seines	Purse seines	Gill nets	Pound nets	Fyke nets	Dip nets	Lines	Flounder drags [2]
Fishermen	116	98	41	30	50	44	181	340
Vessels, steam		3						4
Vessels and boats, motor	17	3	23	13	14	15	116	129
Boats, row	57	9	22	19	34	24	66	
Apparatus	75	7	29	28	260	29	988	141

Items	Lobster pots	Eel pots	Harpoons	Spears	Eel weirs	Eel racks	Traps	Total, exclusive of duplication
Fishermen	376	83	37	20	4	3	6	944
Vessels, steam								7
Vessels and boats, motor	239	33	14	11	2		3	353
Boats, row	123	59	1	21	6		8	277
Apparatus	23,420	2,058	14	62	3	3	3	

CATCH: BY GEAR

Species	Haul seines		Purse seines		Gill nets		Pound nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	10,500	$105			800	$8	9,700	$107
Bluefish					840	210	420	104
Butterfish							7,600	780
Carp	306	39			6,000	480		
Eels, common	380	68					400	60
Flounders	50	5			10	1	20,840	1,887
Mackerel			779,945	$33,270			2,340	284
Menhaden			7,676,654	69,144	22,400	224	34,400	494
Minnows	9,799	2,303						
Mummichog	12,970	2,991						
Roach or shiners	1,068	294						
Scup							2,121	52
Sea robin							4,600	92
Skates					500	5	2,000	60
Smelt	8,327	2,480						
Spot							1,250	150
Squeteagues					175	44	23,985	4,731
Striped bass					1,000	300	2,654	651
Suckers	45,561	3,620			100	8		
Tautog	300	30					7,579	708
Whiting	300	6						
Lobsters							49	22
Squid							27,600	2,326
Total	89,561	11,941	8,456,599	102,414	31,825	1,280	147,538	12,508

[1] Exclusive of the clam, oyster, and scallop fisheries.
[2] Includes a few otter trawls used for fish other than flounders.

Fisheries of Connecticut, 1927—Continued

CATCH: BY GEAR—Continued

Species	Fyke nets		Dip nets		Lines		Flounder drags [3]	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	14,400	$144	300	$4				
Bluefish					14,430	$3,768		
Bullheads	280	20			60	5		
Carp	4,675	668	50	8				
Cod					477,444	17,885	213,118	$12,098
Eels, common	5,075	1,321			6,025	504		
Eels, lamprey	899	397						
Flounders	1,747	145			4,137	405	7,772,404	315,251
Haddock					14,800	740	2,077,874	125,808
Hake	65	6					400	8
Halibut					90,000	9,000		
Mackerel					5,350	405		
Minnows			24	48				
Pickerel	250	33						
Pollock					15,637	469		
Roach or shiners	500	35	20	8				
Scup					2,250	325		
Sea bass					2,080	448		
Sea robin							32,600	632
Sharks							20,500	364
Skates	500	10			77	4	27,400	408
Smelt			67	17	170	45		
Squeteagues	500	75			400	65		
Striped bass	3	1			510	128		
Sturgeon							687	140
Suckers	17,370	3,596	200	21				
Tautog	600	60			68,097	6,618	160	20
Tomcod	89	8			30	3		
White perch	50	8						
Yellow perch	1,365	143						
Crabs, blue, hard			5,628	719				
Crabs, blue, soft			328	123				
Lobster							1,210	430
Total	78,368	6,670	6,617	948	701,497	40,817	10,146,353	455,159

Species	Lobster pots		Eel pots		Harpoons		Spears	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Eels, common			73,375	$10,819			13,053	$1,774
Swordfish					106,766	$16,359		
Crabs, sand	18,500	$380						
Lobsters	671,751	257,268						
Total	690,251	257,648	73,375	10,819	106,766	16,359	13,053	1,774

Species	Eel weirs		Eel racks		Traps		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives					1,000	$40	36,700	$408
Bluefish							15,690	4,082
Bullheads							340	25
Butterfish							7,600	780
Carp					156	24	11,187	1,219
Cod							690,562	29,983
Eels, common	1,000	$250	720	$165			100,028	14,961
Eels, lamprey							899	397
Flounders							7,799,188	317,694
Haddock							2,092,674	126,548
Hake							465	14
Halibut							90,000	9,000
Mackerel							787,635	33,959
Menhaden							7,733,454	69,862
Minnows							9,823	2,351
Mummichog							12,970	2,991

[3] Includes the catch of a few otter trawls used for fish other than flounders.

Fisheries of Connecticut, 1927—Continued

CATCH: By gear—Continued

Species	Eel weirs		Eel racks		Traps		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Pickerel							250	33
Pollock							15,637	469
Roach or shiners							1,588	337
Scup							4,371	377
Sea bass							2,080	448
Sea robin							37,200	724
Sharks							20,500	364
Skates							30,477	487
Smelt							8,564	2,542
Spot							1,250	150
Squeteagues							25,060	4,915
Striped bass							4,167	1,080
Sturgeon							687	140
Suckers			75	4			93,306	7,249
Swordfish							106,766	16,359
Tautog							76,736	7,436
Tomcod							119	11
White perch							50	8
Whiting							300	6
Yellow perch							1,365	143
Crabs, blue, hard							5,628	719
Crabs, blue, soft							328	123
Crabs, sand							18,500	380
Lobsters							673,010	257,720
Squid							27,600	2,326
Total	1,000	250	795	169	1,156	64	20,544,754	918,820

OPERATING UNITS AND CATCH: By counties

County	Fishermen	Vessels, steam	Vessels and boats, motor	Boats, row	Products	
	Number	*Number*	*Number*	*Number*	*Pounds*	*Value*
Fairfield	71		39	22	222,155	$36,065
Hartford	68		7	27	62,319	6,129
Middlesex	80		44	41	261,427	39,925
New Haven	114		58	48	267,562	51,486
New London	611	7	205	139	19,731,291	785,215
Total	944	7	353	277	20,544,754	918,820

FISHERIES OF THE MIDDLE ATLANTIC STATES

The latest statistical canvass of the fisheries and fishery industries of the Middle Atlantic States (New York, New Jersey, Pennsylvania, and Delaware), was for the calendar year 1926. The complete statistics for this canvass are published in the report of the division of fishery industries for 1927 and in condensed form in Statistical Bulletin No. 786.

During 1926 the fisheries and fishery industries of the Middle Atlantic States gave employment to 14,335 persons, of whom 9,953 were fishermen, 107 were engaged in the transporting trade, 3,412 were in the wholesale trade, and 843 in the canning and by-products industries. The catch of the fisheries of these States amounted to 168,012,495 pounds, valued at $12,456,256. The products of the canning, salting, smoking, and by-products industries had a value of $4,018,488.

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VESSEL FISHERIES AT NEW YORK CITY AND GROTON, CONN., 1928 [4]

During 1928 fishing vessels of 5 net tons and over landed 71,177,000 pounds of fishery products at New York City and Groton. This is 40 per cent more than in 1927 and almost four times the landings during 1922, the first year for which there is a complete record. Most of the groundfish are taken with trawls.

Species landed.—The phenomenal growth of the landings at these ports during but a few years has been due mainly to the greater quantity of haddock landed. In 1928 the landings of this species amounted to 49,990,000 pounds, or 70 per cent of the total. This is almost 12 times the landings of this species in 1922. Most of these haddock are utilized by fish-packing plants in preparing packaged fish products. Next in value were flounders, with landings of 9,979,000 pounds, or 14 per cent of the total. This is slightly less than a year ago. Mackerel were third in importance with landings of 3,850,000 pounds, or 5 per cent of the total. This also is less than was landed in 1927. Cod ranked fourth in 1928 with landings of 2,970,000 pounds, or 4 per cent of the total, an increase of 108 per cent over the landings of this fish in 1927. Tilefish, a species common almost exclusively to these ports, were fifth, with landings of 2,365,000 pounds, or 3 per cent of the total. This was slightly less than in the previous year. The landings of all other species amounted to about 2,000,000 pounds.

Landings of fish at New York City and Groton, Conn., 1922–1928 [1]

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Bluefish	Cod	Flounders	Haddock	Hake	Halibut	Mackerel	Pollock
1922	2,032	936	5,550	4,332	----------	----------	1,371	----------
1923	1,735	1,394	9,614	10,792	----------	----------	1,251	----------
1924	111	1,686	13,281	[2] 14,449	----------	----------	3,047	----------
1925	51	1,647	17,912	14,771	----------	73	2,670	----------
1926	74	1,282	12,793	17,908	----------	54	5,038	----------
1927	71	1,426	10,076	30,403	----------	40	4,939	----------
1928	143	2,970	9,979	49,990	215	59	3,850	183

Year	Porgies, or scup, and sea bass	Sturgeon	Swordfish	Tilefish	Squeteague or weakfish	Miscellaneous	Total
1922	1,583	20	2	1,153	59	3,716	20,754
1923	2,553	----------	----------	1,364	272	4,857	33,832
1924	808	----------	----------	1,262	332	45	35,021
1925	1,318	----------	----------	1,015	1,099	66	40,622
1926	540	----------	----------	1,975	228	42	39,934
1927	459	----------	----------	2,777	171	410	50,772
1928	622	----------	22	2,365	16	763	71,177

[1] Includes the landings of fish at Groton, Conn., beginning with November, 1927.
[2] Includes the landings of some mixed fish.

NOTE.—Where landings are not shown for certain species, it is probable they are included under "Miscellaneous."

[4] Statistics of the landings of fish by vessels of over 5 net tons at New York City have been collected during the past few years by J. H. Mathews, chairman, statistical committee, United States Fisheries Association. These have been forwarded to the bureau, where they have been compiled. Reports have been disseminated periodically through the pages of the official monthly publication of the United States Fisheries Association, whose headquarters are at 31A Fulton Street, New York City.

Since November, 1927, statistics of the landings of fish by vessels at Groton, Conn., have been included with those for fish landed at New York City, because at that time one of the firms packing fish at New York City moved its plant to Groton, thus requiring the trawlers to unload at Groton. Thus, by including the landings at Groton, the figures since November, 1927, are comparable with those for previous years. The statistics at both ports are combined to avoid advertising individual enterprise.

SHAD FISHERY OF THE HUDSON RIVER

The catch of shad in 1928 was made by 293 fishermen and amounted to 79,029 fish with a weight of 246,231 pounds and valued at $43,149 to the fishermen. The catch was about 71 per cent as large as that for 1927 and slightly over 93 per cent of that for 1926, but greater than for any other year since 1919. The average price per pound to fishermen during late years has declined, with that for 1920 appearing to be the peak. New York fishermen took 77 per cent of the catch and New Jersey fishermen took the remaining 23 per cent.

Above Peekskill drift gill nets were the prevailing apparatus of capture, but below that city stake gill nets were more popular. Some shad were taken incidentally in seines, but only two seines were fished for this species exclusively.

Shad fishery of the Hudson River, 1928

OPERATING UNITS AND CATCH: BY STATES

Items	New York			New Jersey			Total		
	Number	*Pounds*	*Value*	*Number*	*Pounds*	*Value*	*Number*	*Pounds*	*Value*
Fishermen	270			23			293		
Rowboats and scows	100		$4,810	7		$850	107		$5,660
Motor boats	38		4,780	4		3,950	42		8,730
Gill nets, drift	118		17,240				118		17,240
Gill nets, stake	16		1,455	7		2,100	23		3,555
Haul seines	2		350				2		350
Shore and accessory property			1,260			2,200			3,460
Total			29,895			9,100			38,995
Shad caught:									
With drift gill nets	53,477	169,557	27,656				53,477	169,557	27,656
With stake gill nets	4,100	14,291	3,292	17,950	52,050	10,460	22,050	66,341	13,752
With haul seines	2,350	6,640	1,045				2,350	6,640	1,045
With various apparatus incidentally	1,152	3,693	696				1,152	3,693	696
Total	61,079	194,181	32,689	17,950	52,050	10,460	79,029	246,231	43,149

Catch of shad in the Hudson River for various years, 1896 to 1928

Year	New York			New Jersey			Total		
	Number	*Pounds*	*Value*	*Number*	*Pounds*	*Value*	*Number*	*Pounds*	*Value*
1896	420,098	1,681,371	$58,921	168,800	675,595	$24,315	588,898	2,356,966	$83,237
1897	404,877	1,506,142	49,353	115,200	529,920	17,934	520,077	2,036,062	67,287
1898	410,395	1,534,877	50,875	129,855	606,423	18,510	540,250	2,141,300	69,385
1901	829,612	3,202,302	100,762	144,315	577,260	21,647	973,927	3,779,562	122,409
1904	100,624	402,496	28,896	57,657	201,800	17,758	158,281	604,296	46,654
1910 [1]	126,534	506,136	51,715	101,720	406,880	49,109	228,254	913,016	100,824
1915	11,606	48,564	5,969	4,249	20,104	2,674	15,855	68,668	8,643
1916	7,787	32,923	4,540	1,500	7,250	925	9,287	40,173	5,465
1917	10,615	38,344	5,810	1,400	5,040	720	12,015	43,384	6,530
1918	63,404	220,602	44,784	3,999	14,000	3,400	67,403	234,602	48,184
1919	76,501	301,306	60,690	13,800	73,668	23,034	90,301	374,974	83,724
1920	39,692	157,715	43,882	9,623	42,129	12,427	49,315	199,844	56,309
1921	28,948	104,883	24,329	6,500	25,920	6,294	35,448	130,803	30,623
1922	36,111	128,324	27,451	12,225	46,862	12,255	48,336	175,186	39,706
1923	28,636	97,863	22,644	6,450	23,865	6,000	35,086	121,728	28,644
1924	22,814	72,519	17,619	5,980	21,850	5,485	28,794	94,369	23,104
1925	31,568	110,359	24,030	4,300	13,975	2,400	38,868	124,334	26,430
1926	73,312	219,183	47,175	11,150	46,237	6,300	84,462	265,420	53,475
1927	89,984	299,693	56,950	20,300	58,362	6,700	110,284	358,055	63,650
1928	61,079	194,181	32,689	17,950	52,050	10,460	79,029	246,231	43,149

[1] Includes catch in lower New York Bay, Raritan Bay, and tributaries, but this was inconsiderable.

FISHERIES OF THE CHESAPEAKE BAY STATES

The latest statistical canvass of the fisheries and fishery industries of the Chesapeake Bay States (Maryland and Virginia) was for the calendar year 1925. Complete statistics are published in the report of the division of fishery industries for 1926 and in condensed form in Statistical Bulletin No. 745.

During 1925 the fisheries and fishery industries of Maryland and Virginia gave employment to 39,091 persons, of whom 25,856 were engaged in fishing operations, 9,671 in the wholesale fishery trade, and 3,564 in the canning, salting, smoking, and by-products industries. The products of the fisheries of the two States amounted to 333,205,769 pounds, valued at $13,948,060. The products of the canning and other fishery industries had a value of $4,936,664.

SHAD AND ALEWIFE FISHERIES OF THE POTOMAC RIVER

The catch of shad in 1928 was the largest for any year during the past 27 years, with the exception of 1922, and amounted to 716,420 in number, with a weight of 2,077,622 pounds, valued at $214,687 to the 754 fishermen prosecuting the fishery. This represents approximately 81 per cent of the catch for 1922 (which was the largest catch on record) and 90 per cent of the catch for 1901, which was the second largest year on record. The average price per pound received by the fishermen this year was somewhat less than in former years, due largely to competition from Pacific coast shad. It is interesting to note here that shad were introduced by the Bureau of Fisheries on the Pacific coast in 1871 and their numbers have increased rapidly, until now eastern cities are being supplied with large quantities of the Pacific fish.

More than four-fifths of the Potomac catch this year was made in Virginia waters and was taken largely in pound nets in Northumberland County. The rest of the catch was made in Maryland waters, mostly with drift gill nets. Buy boats from Washington, D. C., purchased most of the catch, although a considerable quantity was shipped from Widewater, Va., to New York and other eastern cities.

The catch of alewives amounted to 14,783,655 fish, weighing 5,903,062 pounds, and having a value to the fishermen of $58,297. This is the largest recorded catch since 1909, except that of 1924. It amounted to slightly over 50 per cent of that in 1909 but more than 97 per cent of that in 1924. The average price per pound to fishermen in 1928 was slightly lower than in 1924, but double that in 1909. Nearly 88 per cent of the entire catch was taken by Virginia fishermen, and virtually all in both States were caught in pound nets. Northumberland County, Va., produced the greater part of the total output. Many of the alewives caught in Virginia are handled by firms engaged in canning herring and herring roe.

Shad and alewife fisheries of the Potomac River, 1928

OPERATING UNITS AND CATCH: BY STATES

Items	Maryland			Virginia			Total		
	Number	*Pounds*	*Value*	*Number*	*Pounds*	*Value*	*Number*	*Pounds*	*Value*
Fishermen	221			533			754		
Row boats and scows	74		$2,890	148		$4,425	222		$7,315
Motor boats	53		12,960	186		56,800	239		69,760
Pound nets	74		13,725	321		109,575	395		123,300
Gill nets	74		9,580	305		10,475	379		20,055
Haul seines	2		650	2		1,100	4		1,750
Shore and accessory property			555			3,165			3,720
Total			40,360			185,540			225,900
Shad caught:									
With pound nets	21,644	65,544	10,321	439,460	1,280,611	138,495	461,104	1,346,155	148,816
With gill nets	103,537	288,003	26,083	135,164	404,085	37,304	238,701	692,088	63,387
With haul seines	13,315	29,579	1,184	3,300	9,800	1,300	16,615	39,379	2,484
Total	138,496	383,126	37,588	577,924	1,694,496	177,099	716,420	2,077,622	214,687
Alewives caught:									
With pound nets	1,737,475	694,990	9,235	12,773,180	5,098,872	47,432	14,510,655	5,793,862	56,667
With gill nets				59,000	23,600	600	59,000	23,600	600
With haul seines	64,000	25,600	330	150,000	60,000	700	214,000	85,600	1,030
Total	1,801,475	720,590	9,565	12,982,180	5,182,472	48,732	14,783,655	5,903,062	58,297

Catch of shad in the Potomac River for various years, 1896 to 1928

Year	Maryland			Virginia			Total		
	Number	*Pounds*	*Value*	*Number*	*Pounds*	*Value*	*Number*	*Pounds*	*Value*
1896	233,238	874,643	$20,524	450,825	1,690,594	$43,084	684,063	2,565,237	$63,608
1901	146,000	547,500	14,800	648,462	2,431,733	104,566	794,462	2,979,233	119,366
1904	83,147	311,801	16,343	289,500	1,085,625	51,709	372,647	1,397,426	68,052
1909	31,158	116,843	9,232	172,813	648,049	44,500	203,971	764,892	53,732
1915	17,196	64,485	6,827	165,206	619,523	65,300	182,402	684,008	72,127
1919	94,512	354,420	56,833	449,957	1,687,339	275,564	544,469	2,041,759	332,397
1920	80,944	302,237	55,963	448,414	1,677,543	278,501	529,358	1,979,780	334,464
1921	49,681	138,207	25,191	356,191	1,022,231	182,179	405,872	1,160,438	207,370
1922	203,682	706,501	95,140	680,494	2,409,070	324,882	884,176	3,115,571	420,022
1923	93,619	308,729	52,917	257,927	878,653	145,702	351,546	1,187,382	198,619
1924	37,505	127,285	20,469	134,805	450,925	67,981	172,310	578,210	88,450
1925	46,008	157,786	35,310	158,574	538,846	128,088	204,582	696,632	163,398
1926	51,601	162,861	34,808	285,061	871,345	182,653	336,662	1,034,206	217,461
1927	30,720	103,728	17,894	191,601	582,853	95,931	222,321	686,581	113,825
1928	138,496	383,126	37,588	577,924	1,694,496	177,099	716,420	2,077,622	214,687

NOTE.—The number of shad taken in the Potomac River in 1878 was 186,000; in 1880, 552,872; in 1889, 868,900; in 1890, 731,453; and in 1891, 621,977.

Catch of alewives in the Potomac River for various years, 1896 to 1928

Year	Maryland			Virginia			Total		
	Number	*Pounds*	*Value*	*Number*	*Pounds*	*Value*	*Number*	*Pounds*	*Value*
1896							24,437,885	9,775,154	$39,003
1909	4,883,000	1,953,200	$10,369	24,601,040	9,840,416	$42,854	29,484,040	11,793,616	53,223
1915	335,000	134,000	1,420	7,276,428	2,910,571	30,741	7,611,428	3,044,571	32,161
1919	1,488,583	772,867	15,508	7,379,319	2,904,054	45,508	8,867,902	3,676,921	61,016
1920	1,077,775	538,888	13,940	7,681,561	3,813,780	41,197	8,759,336	4,352,668	55,137
1921	1,395,000	558,000	9,010	8,908,510	3,563,404	35,031	10,303,510	4,121,404	44,041
1922	1,292,500	517,000	3,700	10,074,500	4,029,800	34,642	11,367,000	4,546,800	38,342
1923	2,119,787	847,916	8,764	9,308,782	3,722,912	40,657	11,428,569	4,570,828	49,421
1924	1,834,000	733,600	6,855	13,299,388	5,319,156	49,667	15,133,388	6,052,756	56,552
1925	415,000	166,000	2,070	7,420,380	2,968,152	35,271	7,835,380	3,134,152	37,341
1926	1,295,020	518,600	6,518	12,500,828	5,000,330	48,848	13,795,848	5,518,930	55,366
1927	1,272,000	508,699	5,741	10,336,067	4,136,666	44,847	11,608,067	4,645,365	50,588
1928	1,801,475	720,590	9,565	12,982,180	5,182,472	48,732	14,783,655	5,903,062	58,297

Data not divisible for the 2 States.

TRADE IN FRESH AND FROZEN FISHERY PRODUCTS IN WASHINGTON, D. C.

The municipal fish wharf and market was built about 12 years ago on an arm of the Potomac River in the southwestern part of Washington, D. C. At the present time 17 firms have stalls in the market and 6 are in private buildings across the street, altogether employing about 70 people. These firms conduct a wholesale and retail business, chiefly wholesale, however. Some of the fish from the boats and vessels are sold at auction direct to the wholesalers. Several wholesalers also sell fish by auction to hucksters. The greater part of the business in the market is transacted at a set price.

Although the market is so situated that fishing boats may land their fish directly, only about 10 per cent of the fish are received in this way. The greater part arrive by truck from points in Maryland and Virginia, especially from the vicinity of Solomons and Galesville. Fish arriving by rail from points along the Atlantic coast, the Great Lakes, or the Pacific coast are also transported by truck from the railheads, as the market has no direct rail connections.

During 1928 the receipts of fresh and frozen fishery products amounted to 8,198,957 pounds, an increase of 3 per cent compared with the previous year and 13 per cent compared with the 5-year average.

There has been very little change in the kinds of fish handled at the market in the last eight years. Taking those species that constituted 75 per cent of the trade for the various years from 1921 to 1928, squeteague, or "sea trout," made up the greater portion of the trade each year; croaker has usually been second, river herring third, oysters fourth, shad fifth, haddock sixth, striped bass seventh, and butterfish eighth.

The retail business in Washington, D. C., is carried on by the stores in the municipal market, stores in the markets uptown, grocery stores, meat markets, and hucksters with horse and wagon. There are about 40 of these fish peddlers doing business at the present time, but their numbers are said to become fewer each year.

Not all of the fish consumed in the District of Columbia comes to the municipal fish wharf and market. It has been estimated that about 2,500,000 pounds are received direct from outside sources by hotels, fish markets, and restaurants. This, added to the amount received at the municipal wharf, would make a total of about 10,500,000 pounds of fresh and frozen fishery products handled in the District of Columbia during 1928. Virtually the entire amount was consumed in the District. According to the Bureau of the Census, the estimated population of the District of Columbia was 552,000 on July 1, 1928, making the per capita consumption of fresh and frozen products during 1928 about 19 pounds in the round weight.

Fishery products received at municipal fish wharf and market, Washington, D. C., 1928, in pounds

	January	February	March	April	May	June	July
Bass, black or sea	2,100	100	200		4,600	9,000	5,600
Bluefish	200	200			4,100	3,000	5,000
Butterfish	1,300	300		2,600	35,300	99,400	47,400
Carp	5,800	9,900	12,367	14,788	22,200	14,100	5,800
Catfish	2,400	15,200	27,235	17,151	14,300	15,000	12,800
Cod	1,800	3,600	4,900	1,300	2,600	1,600	1,200
Crevalle					200		
Croaker	42,200	23,400	10,650	94,000	111,600	243,600	214,600
Eels	100		435	1,027	520	915	510
Flounders	19,300	29,400	44,400	14,400	18,100	6,800	6,600
Groupers	100	400					
Haddock	29,320	49,500	58,980	32,755	43,340	44,970	41,430
Hake	6,600				200		
Halibut	5,900	11,100	8,850	13,500	9,200	9,000	4,000
Herring, river	34,200	82,100	150,200	306,895	204,850	4,050	
Hickory shad or "jacks"	10,500	8,600	3,300	1,000	600		
Kingfish	7,800	2,300	200	1,900	1,400	600	
Mackerel	23,900	23,300	17,400	12,200	23,950	48,000	39,400
Menhaden				1,200			
Mullet	4,300	2,000	1,058	502	400		
Perch	6,800	23,100	47,945	27,460	8,900	6,700	4,700
Pike or pickerel	1,400	700	200		200	500	
Pollock	4,000	650			2,200	800	1,000
Pompano	350				200	100	200
Redfish or red drum	200	200	400	350		500	1,400
Red snapper	400	200		200	390		200
Salmon	1,800	2,300	1,700			800	1,400
Scup or porgy		200			1,800	3,800	400
Shad	9,200	37,500	86,055	209,063	296,220	9,850	
Sheepshead	1,000	400				400	
Smelt	5,350	3,850	800				
Spot	4,100	1,800	800	480	1,700	9,400	51,600
Squeteagues or "sea trout"	60,400	18,400	8,100	37,200	194,600	200,600	220,100
Squid		100				400	1,400
Striped bass	5,100	7,200	15,995	38,105	22,850	5,900	14,100
Sturgeon				490	1,120	110	
Swordfish							735
Tilefish	400	500	900	500	600		
Whiting	500	1,000					
Clams, hard	2,752	3,392	3,200	3,104	6,528	9,920	7,968
Oysters:							
In the shell (meat)	40,628	36,407	16,296	6,776	140		
Opened (meat)	59,243	50,985	36,911	10,445			
Scallops	640	1,400	64	160	1,196	100	80
Crabs				600	8,085	92,985	128,970
Crab meat	1,680	865	1,425	2,520	8,550	18,275	23,250
Lobster	100	50	50	150	250	300	50
Shrimp	4,200	3,200	2,200	1,100	4,000	4,600	7,000
Turtles	350	228	14	28	2,547	1,835	365
Frogs				30	253	38	
Total	408,413	456,027	563,230	853,979	1,059,789	867,948	849,258

	August	September	October	November	December	Total
Bass, black or sea	300			1,700	2,900	26,500
Bluefish	8,200	10,000	15,700	200		46,600
Butterfish	46,200	39,400	22,800	5,000	700	300,400
Carp	3,800	10,900	14,800	5,800	5,900	123,155
Catfish	12,200	16,800	26,100	19,100	9,000	187,286
Cod	2,900	1,000	1,500	3,400	1,400	27,200
Crevalle			800			1,000
Croaker	118,400	62,200	33,200	37,900	49,000	1,040,750
Eels	110	1,465	1,985	1,500	900	9,467
Flounders	10,500	9,600	26,100	30,900	30,800	246,900
Groupers						500
Haddock	37,500	45,160	68,520	45,080	51,600	548,155
Hake	200		2,200	81,700	81,400	172,300
Halibut	6,200	5,600	6,000	4,600	3,000	86,950
Herring, river						782,295
Hickory shad or "jacks"						24,000
Kingfish		800	1,400	7,600	6,400	30,400
Mackerel	31,000	15,800	12,700	16,200	14,400	278,250
Menhaden						1,200
Mullet		2,600	2,300	7,200	1,600	21,960
Perch	15,300	8,100	15,000	15,600	14,300	193,905
Pigfish			800			800
Pike or pickerel	200	200	1,100	2,400	1,000	7,900
Pollock	2,000	5,900	4,600	1,300	2,900	25,350
Pompano			500			1,350
Redfish or red drum	300		100	1,600	200	5,250
Red snapper		200	300	1,000	200	3,090
Salmon	1,300	3,100	1,600	2,300	800	17,100

Fishery products received at municipal fish wharf and market, Washington, D. C., 1928, in pounds—Continued

	August	September	October	November	December	Total
Scup or porgy	200	200	200			6,800
Shad			600	4,800	1,900	655,188
Sheepshead			300	200		2,300
Smelt				100	1,300	11,400
Spot	25,200	6,200	32,900	17,200	3,300	154,680
Squeteagues or "sea trout"	243,400	30,760	350,600	112,900	76,100	1,552,160
Squid				100	200	2,200
Striped bass	22,400	31,840	37,900	23,700	14,300	239,390
Sturgeon			100			1,820
Swordfish	1,040	150				1,925
Tilefish	500	600	200	1,900	1,300	7,400
Whitefish	300	200	400		100	1,000
Whiting				25,800	21,800	49,100
Clams, hard	7,712	5,760	9,184	3,488	2,208	[1] 65,216
Oysters:						
In the shell (meat)		6,384	42,644	40,908	25,739	[2] 215,922
Opened (meat)		18,455	54,029	73,301	70,546	[3] 373,915
Scallops	80	80	840	80	240	4,960
Crabs	137,775	80,220	18,570	150		467,355
Crab meat	23,720	11,410	8,865	3,260	1,375	105,195
Lobster			50	250	450	1,700
Shrimp	13,000	5,000	6,900	3,700	4,200	59,100
Turtles	198	4	16	90	222	5,897
Frogs						321
Total	772,135	436,088	824,403	604,007	503,680	8,198,957

[1] 8,152 bushels. [2] 30,846 bushels. [3] 45,323 gallons.

NOTE.—The clams have been reduced to pounds on the basis of 8 pounds of meat to the bushel, the oysters on the basis of 7 pounds of meat to a bushel and 8¼ pounds to a gallon.

FISHERIES OF THE SOUTH ATLANTIC STATES

The latest statistical canvass, prior to that for 1927, of the fisheries and fishery industries of the South Atlantic States (North Carolina, South Carolina, Georgia, and east coast of Florida) was made for the calendar year 1923. Complete statistics are published in the report of the division of fishery industries for 1924 and in condensed form in Statistical Bulletin No. 652.

During 1923, the fisheries and fishery industries of the South Atlantic States employed 16,298 persons, of whom 10,274 were employed in fishery operations and 6,024 in the wholesale fishery trade and the canning, salting, smoking, and by-products industries. The products of the fisheries of these States amounted to 228,747,930 pounds, valued at $5,087,340.

The fisheries of the South Atlantic States are especially important for the production of shrimp, oysters, and menhaden. A larger catch was reported in 1927 than in any year for which there are records, except 1918. The fisheries in this district gave employment to 11,527 fishermen, or 14 per cent more than in 1923, the most recent year prior to 1927 for which records are available. Of the total number of fishermen employed in 1927, there were 1,229 regular fishermen engaged on vessels and 8,900 regular and 1,398 casual fishermen engaged in the shore and boat fisheries. Their catch amounted to 260,668,693 pounds, valued at $5,695,887. This is an increase of 14 per cent in quantity and 12 per cent in value compared with that for 1923. Of the total catch in 1927, 217,306,021 pounds were fish, valued at $3,757,056, and 43,362,672 pounds were shellfish and miscellaneous products, valued at $1,938,831.

Based on the value to the fishermen, shrimp, with a production of 29,992,313 pounds, valued at $1,173,333, was the most important of the fishery products in the South Atlantic States. Menhaden

ranked second with a production of 157,965,461 pounds valued at $688,811. Other important species were shad, 3,104,048 pounds, valued at $620,851; mullet, 11,377,584 pounds, valued at $522,818; oysters, market and seed, 10,447,255 pounds, valued at $458,059; squeteagues or "sea trout," 5,473,793 pounds, valued at $359,673; kingfish or "king mackerel," 3,355,810 pounds, valued at $230,831; Spanish mackerel, 2,121,675 pounds, valued at $171,137; alewives, 14,123,497 pounds, valued at $149,240; bluefish, 1,636,891 pounds, valued at $147,039; striped bass, 744,810 pounds, valued at $120,383; and scallops, 834,750 pounds, valued at $119,767.

The industries related to the fisheries of the South Atlantic States gave employment to 3,278 persons, of whom 208 were engaged in transporting fishery products, 1,144 were employed in the wholesale trade, receiving $514,242 in salaries and wages, and 1,926 were employed in the canning and by-products trade, receiving $738,846 in salaries and wages. There were 146 establishments in the wholesale trade that handled fresh and frozen products, and 67 establishments in the prepared products and by-products trade. The latter manufactured products valued at $3,580,295, consisting principally of canned oysters and shrimp and menhaden products.

In addition, some of the fishermen of South Carolina prepared 190,700 pounds of salted fish, consisting mostly of salted mullet, valued at $17,196.

Fisheries of the South Atlantic States, 1927

OPERATING UNITS: BY STATES

Items	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
Fishermen:					
On vessels	939	16	126	148	1,229
On boats or shore—					
Regular	4,524	988	671	2,717	8,900
Casual	786	406	124	82	1,398
Total	6,249	1,410	921	2,947	11,527
Vessels:					
Motor	65	2	31	19	117
Tonnage	1,673	28	390	312	2,403
Sail	60				60
Tonnage	489				489
Boats:					
Motor	1,631	99	175	1,179	3,084
Other	1,886	836	342	1,075	4,139
Apparatus:					
Gill nets	17,591	459	186	1,028	19,264
Square yards	2,722,664	437,203	110,441	1,200,860	4,471,168
Haul seines	636	33	6	92	767
Yards	187,716	4,235	1,998	49,800	243,749
Purse seines	47		3	4	54
Yards	11,100		600	1,260	12,960
Pound nets	2,767			14	2,781
Trammel nets				4	4
Square yards				1,000	1,000
Shrimp trawls	64	28	188	366	646
Yards at mouth	1,060	536	3,760	8,539	13,895
Otter trawls	1				1
Yards at mouth	20				20
Lines	301	110	444	6,879	7,734
Hooks, snoods, or baits	77,923	16,546	532	95,783	190,784
Fyke nets	780		20		800
Eel pots	3,800				3,800
Dip nets	329			35	364
Crab traps				275	275
Spears	215	34			249
Dredges	1,044	2	2		1,048
Yards at mouth	1,214	2	3		1,219
Tongs	373	38	147	62	620
Rakes	679	73		12	764
Grabs		436	191		627
Minor apparatus [1]	72	30	28	622	752

[1] Includes cast nets, crawfish traps, fish traps, box traps, revolving traps, turtle traps, and crawfish hooks.

Fisheries of the South Atlantic States, 1927—Continued

CATCH OF FISH

Products	North Carolina		South Carolina		Georgia	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	13,910,605	$147,032				
Angelfish or spadefish	12,996	497				
Black bass	117,006	18,446				
Bluefish	852,391	54,281	12,700	$1,921		
Bonito	14,713	447				
Bowfin	28,150	591				
Butterfish	342,254	11,095	300	20		
Carp	632,520	35,898				
Catfish	452,875	14,771	4,000	170	20,035	$1,208
Crevalle	600	12	1,500	75		
Cod	764	39				
Croaker	3,932,058	77,385	12,600	670	3,000	150
Drum, black	11,413	323	3,100	305		
Drum, red, or redfish	99,147	3,513	6,650	403	1,000	50
Eels	159,769	12,340			10	1
Flounders	348,978	23,009	14,500	1,391	200	10
Garfish	3,000	30				
Gizzard shad	60,349	1,106				
Groupers					26,272	1,527
Grunts	9,000	565			200	18
Harvestfish or "starfish"	937,596	29,227				
Hickory shad	529,632	35,328	18,524	2,582	14,200	710
Jewfish					2,388	110
Kingfish or "king mackerel"	25,000	1,380				
King whiting or "kingfish"	486,882	27,733	59,500	6,725	2,600	130
Menhaden	98,987,261	489,850			34,102,000	119,357
Mullet	4,325,203	262,192	461,000	27,360	8,533	488
Pigfish	147,225	2,676	500	75		
Pike	21,975	2,726				
Pinfish or sailor's choice	25,550	408				
Pompano	13,221	1,631	5,500	825		
Porgies			500	35	3,402	281
Sea bass	315,601	25,248	125,000	11,950	47,694	4,551
Shad	2,386,685	475,292	182,425	38,313	187,380	43,578
Sharks			8,000	240		
Skates			1,000	30		
Sheepshead	22,788	1,335				
Snapper, red	1,150	107			63,643	6,435
Spanish mackerel	200,352	21,163				
Spot	1,959,252	45,531	216,100	9,798	800	40
Squeteagues or "sea trout"	4,533,807	263,233	53,500	5,170	17,541	2,476
Strawberry bass	3,350	311				
Striped bass	737,805	119,481			5,355	490
Sturgeon	27,139	3,443	13,250	1,766	2,625	303
Suckers	16,609	918				
Sunfish	24,019	549				
Tripletail	1,013	27				
White perch	504,653	40,574				
Yellow perch	117,706	7,264				
Total	137,340,062	2,259,007	1,200,149	109,824	34,508,878	181,913

Products	Florida (east coast)		Total	
	Pounds	*Value*	*Pounds*	*Value*
Alewives	212,892	$2,208	14,123,497	$149,240
Amberfish	9,200	360	9,200	360
Angelfish or spadefish	11,030	359	24,026	856
Black bass	118,154	12,862	235,160	31,308
Bluefish	771,800	90,837	1,636,891	147,039
Blue runner or hardtail	88,380	2,602	88,380	2,602
Bonito			14,713	447
Bowfin			28,150	591
Butterfish			342,554	11,115
Carp			632,520	35,898
Catfish	1,925,233	77,048	2,402,143	93,197
Crappie	368,059	25,949	368,059	25,949
Crevalle	207,800	6,425	209,900	6,512
Cod			764	39
Croaker	39,050	1,553	3,986,708	79,758
Drum, black	83,600	2,989	98,113	3,617

Fisheries of the South Atlantic States, 1927—Continued

CATCH OF FISH—Continued

Products	Florida (east coast)		Total	
	Pounds	*Value*	*Pounds*	*Value*
Drum, red, or redfish	163,300	$9,143	270,097	$13,109
Eels			159,779	12,341
Flounders	21,250	985	384,928	25,395
Garfish			3,000	30
Gizzard shad			60,349	1,106
Groupers	59,900	2,746	86,172	4,273
Grunts	24,600	922	33,800	1,505
Harvestfish or "starfish"			937,596	29,227
Hickory shad	42,246	2,137	604,602	40,757
Hogfish	2,800	154	2,800	154
Jewfish	15,100	338	17,488	448
Kingfish or "king mackerel"	3,330,810	229,451	3,355,810	230,831
King whiting or "kingfish"	168,600	8,964	717,582	43,552
Margatefish	1,100	44	1,100	44
Menhaden	24,876,200	79,604	157,965,461	688,811
Moonfish	3,500	90	3,500	90
Mullet	6,582,848	232,778	11,377,584	522,818
Permit	8,890	263	8,890	263
Pigfish	154,650	5,739	302,375	8,490
Pike			21,975	2,726
Pinfish or sailor's choice	304,100	9,236	329,650	9,644
Pompano	218,950	44,710	237,671	47,166
Porgies	12,000	470	15,902	786
Sea bass	31,700	1,962	519,995	43,711
Sergeantfish or snook	226,250	10,779	226,250	10,779
Shad	347,558	63,668	3,104,048	620,851
Sharks			8,000	240
Skates			1,000	30
Sheepshead	54,450	2,234	77,238	3,569
Snapper, mangrove	40,800	2,435	40,800	2,435
Snapper, mutton	128,900	6,734	128,900	6,734
Snapper, red	59,200	5,868	123,993	12,410
Spanish mackerel	1,921,323	149,974	2,121,675	171,137
Spot	420,750	11,639	2,596,902	67,008
Squeteagues or "sea trout"	868,945	88,794	5,473,793	359,673
Strawberry bass	5,000	250	8,350	561
Striped bass	1,650	412	744,810	120,383
Sturgeon			43,014	5,512
Suckers			16,609	918
Sunfish	305,264	9,395	329,283	9,944
Tripletail			1,013	27
White perch			504,653	40,574
Yellow perch			117,706	7,264
Yellowtail	19,100	1,202	19,100	1,202
Total	44,256,932	1,206,312	217,306,021	3,757,056

CATCH OF SHELLFISH AND MISCELLANEOUS PRODUCTS

Products	North Carolina		South Carolina		Georgia	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard	955,600	$19,512	10,000	$3,000	58,800	$2,395
Crabs, soft	269,000	44,257				
Shrimp	1,275,832	45,706	1,657,127	66,705	12,279,969	468,615
Squid	2,000	60				
Clams, hard	315,360	70,940	46,544	7,307	800	100
Oysters, market, public	3,026,625	197,742	4,412,331	123,052	571,305	36,379
Oysters, market, private	14,000	3,000	1,027,950	32,950	186,032	7,223
Oysters, seed, public	427,000	17,050				
Scallops	834,750	119,767				
Octopus	550	44	1,000	200		
Terrapin			18,351	7,254	1,440	540
Turtles	5,000	270				
Sturgeon roe and caviar	50	50	165	99		
Total	7,125,767	518,398	7,173,468	240,567	13,098,346	515,252

Fisheries of the South Atlantic States, 1927—Continued

CATCH OF SHELLFISH AND MISCELLANEOUS PRODUCTS—Continued

Products	Florida (east coast)		Total	
	Pounds	*Value*	*Pounds*	*Value*
Crabs, hard	121,400	$8,732	1,145,800	$33,639
Crabs, soft			269,000	44,257
Crabs, stone	6,400	576	6,400	576
Sea crawfish or spiny lobster	260,536	21,250	260,536	21,250
Shrimp	14,779,385	592,307	29,992,313	1,173,333
Squid			2,000	60
Clams, hard	9,600	1,000	372,304	79,347
Oysters, market, public	651,182	29,818	8,661,443	386,991
Oysters, market, private	130,830	10,845	1,358,812	54,018
Oysters, seed, public			427,000	17,050
Scallops			834,750	119,767
Octopus			1,550	244
Terrapin			19,791	7,794
Turtles	5,758	86	10,758	356
Sturgeon roe and caviar			215	149
Total	15,965,091	664,614	43,362,672	1,938,831

PRODUCTION OF CERTAIN SHELLFISH SHOWN IN NUMBERS AND BUSHELS

Products	North Carolina		South Carolina		Georgia	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Crabs, hard—number	2,866,800	$19,512	30,000	$3,000	176,400	$2,395
Crabs, soft—do	807,000	44,257				
Clams, hard—bushels	39,429	70,940	5,818	7,307	100	100
Oysters, market, public—do	432,375	197,742	630,333	123,052	81,615	36,379
Oysters, market, private—do	2,000	3,000	146,850	32,950	26,576	7,223
Oysters, seed, public—do	61,000	17,050				
Scallops—do	139,125	119,767				

Products	Florida (east coast)		Total	
	Quantity	*Value*	*Quantity*	*Value*
Crabs, hard—number	364,200	$8,732	3,437,400	$33,639
Crabs, soft—do			807,000	44,257
Crabs, stone—do	8,533	576	8,533	576
Clams, hard—bushels	1,200	1,000	46,538	79,347
Oysters, market, public—do	93,026	29,818	1,237,349	386,991
Oysters, market, private—do	18,690	10,845	194,116	54,018
Oysters, seed, public—do			61,000	17,050
Scallops—do			139,125	119,767

Industries related to the fisheries of the South Atlantic States, 1927

Items	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
Transporting:					
Persons engaged—number	61	111	29	7	208
Vessels:					
Motor—do	42	15	15	3	75
Tonnage—do	452	200	140	30	822
Sail—do		40			40
Tonnage—do		369			369
Wholesale trade:					
Establishments—do	36	9	14	87	146
Persons engaged—do	216	74	210	644	1,144
Salaries and wages paid—dollars	91,615	44,566	104,299	273,762	514,242
Prepared products and by-products industries:					
Establishments—number	35	15	12	5	67
Persons engaged—do	339	600	768	219	1,926
Salaries and wages paid—dollars	263,105	194,046	161,535	120,160	738,846
Products—do	1,036,841	882,261	994,594	666,599	3,580,295

NORTH CAROLINA

In 1927 North Carolina was foremost among the States bordering on the South Atlantic in the importance of its fisheries, employing 54 per cent of the total number of fishermen and accounting for 55 per cent of the total catch. There were 6,865 persons employed. This is 26 per cent less than the number employed in 1923. Of the total, 6,249 were fishermen, 61 were employed on transporting vessels, 216 in the wholesale trade, and 339 in the prepared products and by-products industries.

The catch amounted to 144,465,829 pounds, valued at $2,777,405. This is an increase of 52 per cent in amount and 15 per cent in the value of the catch, as compared with the catch and its value in 1923. Of the total value of the catch, that for menhaden accounted for 18 per cent; shad, 17 per cent; squeteagues or "sea trout," 9 per cent; mullet, 9 per cent; oysters, 8 per cent; alewives, 5 per cent; and striped bass, 4 per cent. Of the total quantity, that for menhaden accounted for 69 per cent; alewives, 10 per cent; squeteagues or "sea trout," 3 per cent; mullet, 3 per cent; croaker, 3 per cent; oysters, 2 per cent; and shad, 2 per cent.

Operating units.—The catch of fishery products from the Atlantic Ocean and coastal streams was taken by 6,249 fishermen, who used 3,517 motor and other small boats, 65 motor vessels, 60 sailing vessels, and 14 types of major gear. The motor and sailing vessels had a combined capacity of 2,162 net tons.

Fisheries of North Carolina

OPERATING UNITS: BY GEAR

Items	Haul seines	Purse seines	Gill nets	Pound nets	Fyke nets	Dip nets	Lines	Shrimp trawls	Otter trawls	Revolving traps
Fishermen:										
On boats and shore—										
Regular	2,113	86	1,943	638	46	302	277	128		
Casual	222		332	162	11	27	10			8
On vessels	108	622					11		3	
Total	2,445	708	2,275	800	57	329	298	128	3	8
Boats:										
Motor	454	12	749	400	22	95	143	64		
Other	409	22	857	271	11	88	44			8
Vessels:										
Motor—										
5 to 10 tons	16	5					2		1	
11 to 20 tons	2	3					1			
21 to 30 tons		5								
31 to 40 tons		4								
41 to 50 tons		7								
51 to 60 tons		7								
61 to 70 tons		3								
71 to 80 tons		2								
Total	18	36					3		1	
Net tonnage	136	1,419					30		10	
Apparatus:										
Number	636	47	17,591	2,767	780	329	361	64	1	4
Length, yards	187,716	11,100								
Square yards			2,722,664							
Yards at mouth								1,060	20	
Hooks, snoods, or baits							77,923			

Fisheries of North Carolina—Continued

OPERATING UNITS: By gear—Continued

Items	Box traps	Eel pots	Turtle traps	Spears	Dredges	Tongs	Rakes	By hand	Total, exclusive of duplication
Fishermen:									
On boats and shore—									
Regular	6	93	2	215	576	350	579	15	4,524
Casual		5					100		786
On vessels					185	16			939
Total	6	98	2	215	761	366	679	15	6,249
Boats:									
Motor		38	2		355	158	34		1,631
Other	6	61		165	30	124	291	10	1,886
Vessels:									
Motor—									
5 to 10 tons					1	2			28
11 to 20 tons					1	3			8
21 to 30 tons					1				6
31 to 40 tons									4
41 to 50 tons									7
51 to 60 tons									7
61 to 70 tons									3
71 to 80 tons									2
Total					3	5			65
Net tonnage					44	47			1,673
Sail—									
5 to 10 tons					50				50
11 to 20 tons					10				10
Total					60				60
Net tonnage					489				489
Grand total					63	5			125
Net tonnage					533	47			2,162
Apparatus:									
Number	18	3,800	50	215	1,044	373	679		
Yards at mouth					1,214				

Catch by gear.—Four types of gear accounted for 94 per cent of the products taken in the marine and coastal river fisheries of North Carolina during 1927. Listed in the order of their importance they were purse seines, which accounted for 69 per cent of the catch; pound nets, 10 per cent; haul seines, 10 per cent; and gill nets, 5 per cent.

The catch by purse seines consisted almost entirely of menhaden; that by pound nets was made up largely of alewives, squeteagues or "sea trout," and shad; that by haul seines consisted principally of

alewives, croaker, mullet, and spot; and that by gill nets was made up chiefly of mullet, shad, croaker, squeteagues or "sea trout," and alewives.

Fisheries of North Carolina, 1927

CATCH: BY GEAR

Species	Haul seines		Purse seines		Gill nets		Pound nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	4,486,255	$52,368			598,200	$13,368	8,576,150	$78,356
Angelfish or spadefish	7,771	289					4,875	193
Black bass	95,546	14,992			950	104	2,385	408
Bluefish	442,016	26,254			338,875	22,336	65,500	5,121
Bonito	4,334	128			10,000	300	379	19
Bowfin	6,750	154					10,950	136
Butterfish	123,550	4,310			10,925	615	207,779	6,170
Carp	461,752	25,523			20,350	1,416	31,118	889
Catfish	168,971	4,330			29,100	1,052	117,304	3,371
Crevalle	600	12						
Cod					500	25	264	14
Croaker	2,541,227	45,064			659,483	15,893	662,348	13,668
Drum, black	4,493	100			4,000	160	2,920	63
Drum, red, or redfish	66,250	2,383			12,041	400	19,856	650
Eels							7,029	652
Flounders	57,765	3,424			26,325	1,898	135,688	8,470
Garfish	3,000	30						
Gizzard shad	15,600	290			11,000	220	21,749	386
Harvestfish or "starfish"	68,000	2,390			54,000	1,620	815,596	25,217
Hickory shad	64,210	3,238			265,423	17,540	199,599	14,510
King whiting or "kingfish"	150,713	8,259			301,957	17,748	34,212	1,726
Menhaden			98,987,261	$489,850				
Mullet	2,369,997	141,148	348,400	21,340	1,585,665	98,425	21,141	1,279
Pigfish	109,000	1,613			26,000	519	4,925	78
Pike	6,100	722			4,100	248	2,535	236
Pinfish or sailor's choice	2,500	20			9,500	185	11,350	107
Pompano	6,867	850			1,100	131	5,254	650
Sea bass							108	9
Shad	111,702	19,009			1,179,923	241,104	1,086,710	213,639
Sheepshead	12,298	672			5,100	335	5,390	328
Spanish mackerel	33,019	3,330			32,464	3,337	114,869	12,496
Spot	1,243,800	27,851			414,650	11,803	297,802	5,782
Squeteague or "sea trout," gray	774,134	36,524			642,555	33,789	2,156,375	91,499
Squeteague or "sea trout," speckled	677,598	66,086			210,443	26,764	64,502	8,168
Strawberry bass	500	40					350	21
Striped bass	188,496	27,267	16,700	2,505	288,910	50,420	233,499	37,291
Sturgeon	7,892	977			15,916	1,965	3,331	501
Sturgeon roe					50	50		
Suckers	400	8			7,500	450	4,379	310
Sunfish	18,775	431					3,591	72
Tripletail							1,013	27
White perch	281,050	17,209			30,775	4,116	136,912	14,999
Yellow perch	48,512	2,737			3,850	213	12,564	1,025
Crabs, soft	113,600	18,735						
Shrimp	60,000	2,600						
Total	14,835,043	561,367	99,352,361	513,695	6,801,630	568,549	15,082,301	548,536

Fisheries of North Carolina, 1927—Continued

CATCH: BY GEAR—Continued

Species	Fyke nets		Dip nets		Lines		Shrimp trawls	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	55,000	$1,050	135,000	$990				
Angelfish or spadefish					350	$15		
Black bass	18,125	2,942						
Bluefish					6,000	570		
Bowfin	9,450	261						
Carp	107,100	7,460						
Catfish	93,300	3,428			34,000	2,280		
Drum, red, or redfish					1,000	80		
Eels	4,990	303						
Flounders	8,000	393			800	58	13,000	$540
Gizzard shad	12,000	210						
Grunts					9,000	565		
Hickory shad	400	40						
Kingfish or king mackerel					9,000	900	16,000	480
Pigfish					7,309	466		
Pike	9,240	1,520						
Pinfish or sailor's choice					2,209	96		
Sea bass					315,493	25,239		
Shad	8,350	1,540						
Snapper, red					1,150	107		
Spanish mackerel					20,000	2,000		
Spot							2,500	75
Squeteague or "sea trout," gray					4,000	275	4,000	120
Strawberry bass	2,500	250						
Striped bass	10,100	1,978						
Suckers	4,330	150						
Sunfish	1,653	46						
White perch	46,816	3,340						
Yellow perch	52,780	3,289						
Crabs, hard					940,600	19,062		
Crabs, soft			128,200	20,932				
Shrimp							1,215,832	43,106
Octopus					550	44		
Squid							2,000	60
Total	444,134	28,200	263,200	21,922	1,351,443	51,757	1,253,332	44,381

Species	Otter trawls		Revolving traps		Box traps		Eel pots	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives			60,000	$900				
Bowfin					1,000	$40		
Carp			200	10	12,000	600		
Catfish			200	10	10,000	300		
Croaker	69,000	$2,760						
Eels							147,750	$11,385
Flounders	400	16						
Spot	500	20						
Squeteague or "sea trout," gray	200	8						
Striped bass			100	20				
White perch			100	10	9,000	900		
Total	70,100	2,804	60,600	950	32,000	1,840	147,750	11,385

Species	Turtle traps		Spears		Dredges	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders			107,000	$8,210		
Crabs, hard					15,000	$450
Crabs, soft					27,200	4,590
Oysters, market, public					2,107,700	133,985
Oysters, seed, public					133,000	4,750
Scallops					657,990	95,108
Turtles	4,000	$200				
Total	4,000	200	107,000	8,210	2,940,890	238,883

Species	Tongs		Rakes		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Clams, hard			307,360	$69,440	8,000	$1,500
Oysters, market, public	883,925	$61,557			35,000	2,200
Oysters, market, private	14,000	3,000				
Oysters, seed, public	294,000	12,300				
Scallops			176,760	24,659		
Turtles					1,000	70
Total	1,191,925	76,857	484,120	94,099	44,000	3,770

Fisheries by counties.—Fishing was prosecuted in the marine and oastal river waters of 22 counties in North Carolina in 1927. Ranked ccording to value, the fisheries of Carteret County were the most nportant, accounting for 57 per cent of the total catch and 35 per ent of the total value of the catch. Dare County was next, account- ng for 4 per cent of the total catch and 17 per cent of the total value. Brunswick County ranked third, with 21 per cent of the total catch nd 10 per cent of the total value. Other counties accounting for atches in excess of $100,000 in value were Pamlico, Beaufort, and Hyde.

Fisheries of North Carolina, 1927

OPERATING UNITS AND CATCH: By COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
eaufort	322		26	209	77	109	2,340,739	$128,667
ertie		36			6	7	937,090	18,945
runswick	618	110	8	374	42	135	30,441,747	267,575
amden	5	4			7	2	35,700	2,832
arteret	2,055		69	1,396	579	477	81,741,670	977,393
howan		158			56	64	6,072,772	75,428
raven	66	28			20	54	832,282	54,873
urrituck	263	8			117	34	1,173,045	86,636
are	753				331	213	6,312,596	474,223
ates		40			1	40	14,800	2,049
ertford	4	34			2	33	284,190	6,008
yde	230		2	16	123	80	2,544,035	121,286
artin	6	104			2	41	1,230,275	13,781
ew Hanover	296	90			25	168	742,425	60,708
nslow	193	35	1	8	28	121	1,413,043	87,395
amlico	254	2	14	108	88	91	2,338,950	135,614
asquotank	48		5	51	14	17	415,228	43,921
ender	120	20			2	84	578,678	48,481
erquimans	60				30	30	692,400	60,333
tt		17				7	19,880	775
yrrell	103				47	42	831,520	33,560
ashington	67	100			34	37	3,472,764	76,922
Total	5,463	786	125	2,162	1,631	1,886	144,465,829	2,777,405

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—In 1927 there were 61 persons engaged in orth Carolina primarily in transporting the catch from the fishing rounds to market. In this trade 42 registered motor vessels, with capacity of 452 net tons, were operated. The size of vessel in most opular use ranged from 5 to 10 net tons.

Wholesale trade.—There were 36 wholesale establishments in North arolina engaged chiefly in handling fresh and frozen fishery products. his is 25 per cent of the total number of such establishments in the outh Atlantic section. The large amount of fish used in reduction actories in this State accounts for the small number of wholesale ealers in comparison with the total amount of fish caught. These stablishments employed 216 persons, who received $91,615 in salaries nd wages. Beaufort County had 8 wholesale establishments, arteret County 7, and Onslow County 5. Other counties had ewer than this.

Prepared and by-products trade.—There were 35 establishments in orth Carolina in 1927 engaged in canning and curing fishery prod-

ucts and in manufacturing fishery by-products. These employed 339 persons, who received $263,105 in salaries and wages. The commodities manufactured, which were largely products from the reduction of menhaden, were valued at $1,036,841. This was 29 per cent of the total production of prepared fishery products and by-products manufactured in the South Atlantic States. North Carolina ranks first in the output of such products. Detailed statistics of most of these manufactured items may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

Industries related to the fisheries of North Carolina, 1927

TRANSPORTING

Items	Number
Men on transporting vessels	61
Transporting motor vessels:	
5 to 10 tons	24
11 to 20 tons	15
21 to 30 tons	3
Total	42
Net tonnage	452

WHOLESALE FISHERY TRADE

Items	Beaufort	Brunswick and Craven	Carteret	Dare	Hyde and New Hanover	Onslow	Pamlico, Pender, and Pasquotank	Totals
Establishments	8	4	7	3	3	5	6	36
Persons engaged:								
Proprietors or managers	10	4	8	3	4	10	13	52
Salaried employees	1	3	2				1	7
Wage earners	53	46	16	6	9	4	23	157
Paid to salaried employees	$2,000	$3,556	$3,010				$9,900	$18,466
Paid to wage earners	$20,640	$10,090	$9,510	$3,110	$7,960	$1,830	$20,009	$73,149

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Items	Amount
Establishments	35	Salaries paid	$66,230
Persons engaged:		Wages paid	196,875
Proprietors or managers	48		
Salaried employees	34	Total salaries and wages paid	263,105
Wage earners	257		

Products	Quantity	Value	Products	Quantity	Value
Salted:			Menhaden:		
Mullet, pounds	511,600	$45,469	Dry scrap, tons	5,049	$233,549
Spot, do	156,400	11,956	Acidulated scrap, do	7,468	161,790
Canned:			Fish meal, do	2,304	124,110
Alewife roe, standard cases [1]	1,568	8,935	Oil, gallons	782,778	330,685
Oysters, do	15,618	81,715	Miscellaneous products [2]		38,632
			Total		1,036,841

[1] A standard case contains four dozen 1-pound cans of alewife roe or four dozen 5-ounce cans of oysters.
[2] Includes canned shrimp, poultry feed and lime from crushed oyster shells, and porpoise oil.

SOUTH CAROLINA

The fisheries and related fishery industries of South Carolina employed 2,195 persons in 1927, which is 1 per cent more than the number employed in 1923. Of the total, 1,410 were fishermen, 111 were employed on transporting vessels, 74 in the wholesale trade, and 600 in the prepared products and by-products industries.

The catch amounted to 8,373,617 pounds, valued at $350,391. This is an increase of 24 per cent in amount and 23 per cent in value as compared with the catch and its value for 1923. Of the total value of the catch, that of oysters accounted for 45 per cent; shrimp, 19 per cent; shad, 11 per cent; and mullet, 8 per cent. Of the total quantity, that of oysters accounted for 65 per cent; shrimp, 20 per cent; mullet, 6 per cent; and spot, 3 per cent.

Operating units.—The catch of fishery products in South Carolina during 1927 was taken by 1,410 fishermen, who used 935 motor and other small boats, 2 motor vessels with a capacity of 28 net tons, and 9 types of major gear.

Fisheries of South Carolina, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Gill nets	Cast nets	Lines	Shrimp trawls	Spears	Dredges	Tongs	Rakes	Grabs	Total, exclusive of duplication
Fishermen:											
On boats or shore—											
Regular	226	167	------	90	50	------	------	70	32	433	988
Casual	52	333	30	------	6	44	------	------	41	3	406
On vessels	------	------	------	8	------	------	8	------	------	------	16
Total	278	500	30	98	56	44	8	70	73	436	1,410
Boats:											
Motor	2	65	------	10	28	------	------	4	1	15	99
Other	31	222	30	32	------	34	------	79	48	491	836
Vessels (motor):											
5 to 10 tons	------	------	------	1	------	------	------	------	------	------	1
11 to 20 tons	------	------	------	------	------	------	1	------	------	------	1
Total	------	------	------	1	------	------	1	------	------	------	2
Net tonnage	------	------	------	9	------	------	19	------	------	------	28
Apparatus:											
Number	33	459	30	110	28	34	2	38	73	436	------
Length, yards	4,235	------	------	------	------	------	------	------	------	------	------
Square yards	------	437,203	------	------	------	------	------	------	------	------	------
Yards at mouth	------	------	------	------	536	------	2	------	------	------	------
Hooks, snoods, or baits	------	------	------	16,546	------	------	------	------	------	------	----

Catch by gear.—Four types of gear accounted for 94 per cent of the products taken in the fisheries of South Carolina during 1927. Listed in the order of their importance, they were tongs and grabs, which accounted for 64 per cent; shrimp trawls, 18 per cent; haul seines, 8 per cent; and gill nets, 4 per cent.

The catch by tongs and grabs consisted entirely of oysters; that by shrimp trawls consisted entirely of shrimp; that by haul seines was made up chiefly of mullet and spot; and that by gill nets consisted principally of shad, mullet, and hickory shad.

Fisheries of South Carolina, 1927

CATCH: BY GEAR

Species	Haul seines		Gill nets		Cast nets		Lines	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bluefish	8,200	$796	4,500	$1,125				
Butterfish	300	20						
Catfish			1,000	20			3,000	$150
Crevalle							1,500	75
Croaker	2,500	165	100	5			10,000	500
Drum, black	100	5					3,000	300
Drum, red, or redfish	4,200	252	200	6			250	25
Flounders	1,100	108			2,000	$200	400	33
Hickory shad			18,524	2,582				
King whiting	8,000	650	1,500	75			50,000	6,000
Mullet	401,000	23,740	58,000	3,420	2,000	200		
Pigfish							500	75
Pompano	5,500	825						
Porgies							500	35
Sea bass							125,000	11,950
Shad			182,425	38,313				
Sharks							8,000	240
Skates							1,000	30
Spot	203,000	9,040	13,000	750			100	8
Squeteague or "sea trout," gray	3,000	300	3,500	300			30,000	2,400
Squeteague or "sea trout," speckled	8,000	860	2,000	360				
Sturgeon			13,250	1,766				
Sturgeon caviar			165	99				
Crabs, hard							10,000	3,000
Shrimp	10,000	300			98,930	4,946		
Octopus							1,000	200
Terrapin	4,587	1,949						
Total	659,487	39,010	298,164	4,882	102,930	5,346	244,250	25,021

Species	Shrimp trawls		Spears		Dredges	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders			2,000	$120		
Hickory shad			11,000	1,050		
Sturgeon			7,000	950		
Oysters, market, public					21,000	$750
Oysters, market, private					98,000	3,500
Shrimp	1,548,197	$61,459				
Total	1,548,197	61,459	20,000	2,120	119,000	4,250

Species	Tongs and grabs		Rakes		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Clams, hard			46,544	$7,307		
Oysters, market, public	4,389,231	$121,252	2,100	1,050		
Oysters, market, private	929,950	29,450				
Terrapin					13,764	$5,305
Total	5,319,181	150,702	48,644	8,357	13,764	5,305

Fisheries by counties.—Fisheries were prosecuted in the waters of six counties in South Carolina in 1927. Ranked according to value, the fisheries of Beaufort County were most important, accounting for 55 per cent of the total quantity and 44 per cent of the total value of the catch. Charleston County ranked second, accounting for 33 per cent of the total quantity and 30 per cent of the total value. The other counties, in the order of their importance, were Georgetown, Horry, Colleton, and Allendale.

Fisheries of South Carolina, 1927

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Allendale	5					4	2,380	$497
Beaufort	389	6			33	364	4,618,964	155,608
Charleston	203	30	2	28	17	247	2,765,184	106,019
Colleton	63					45	31,350	5,755
Georgetown		330			49	117	377,589	46,343
Horry	254	40				59	578,150	36,169
Total	1,004	406	2	28	99	836	8,373,617	350,391

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—There were 111 persons in South Carolina in 1927 engaged primarily in transporting the catch from the fishing grounds to market. In this trade there were 15 registered motor vessels with a total capacity of 200 net tons and 40 registered sailing vessels with a total capacity of 369 net tons. The size of vessel in most popular use ranged from 5 to 10 net tons.

Wholesale trade.—There were nine wholesale establishments in South Carolina in 1927 engaged chiefly in handling fresh fish and shellfish. Of these, six were in Charleston and Georgetown Counties and three in Beaufort County. These establishments employed 74 persons, who received $44,566 in salaries and wages.

Prepared and by-products trade.—There were 15 establishments in South Carolina in 1927 engaged in the prepared fishery products and by-products industries. These employed 600 persons, who received $194,046 in salaries and wages. The products manufactured, which were principally canned oysters and oyster-shell products, were valued at $882,261. Detailed statistics of most of these manufactured items may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

In addition, the fishermen themselves prepared 190,700 pounds of salted fish, valued at $17,196, which consisted mostly of salted mullet.

Industries related to the fisheries of South Carolina, 1927

TRANSPORTING

Items	Number	Items	Number
Men on transporting vessels	111	Transporting vessels—Continued.	
Transporting vessels:		Sail—	
Motor—		5 to 10 tons	31
5 to 10 tons	7	11 to 20 tons	8
11 to 20 tons	7	21 to 30 tons	1
41 to 50 tons	1		
		Total	40
Total	15	Net tonnage	369
Net tonnage	200		

Industries related to the fisheries of South Carolina, 1927—Continued

WHOLESALE FISHERY TRADE

Items	Charleston and Georgetown	Beaufort	Total
Establishments	6	3	9
Persons engaged:			
Proprietors or managers	10	3	13
Salaried employees	7	1	8
Wage earners	24	29	53
Paid to salaried employees	$20,049	$800	$20,849
Paid to wage earners	$19,117	$4,600	$23,717

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Items	Amount
Establishments	15	Salaries paid	$27,935
Persons engaged:		Wages paid	166,111
Proprietors or managers	12		
Salaried employees	13	Total salaries and wages paid	194,046
Wage earners	575		

Products	Quantity	Value	Products	Quantity	Value
Canned:			Oyster-shell products:		
Oysters—standard cases [1]	111,924	$588,060	Poultry feed—tons	16,149	$179,639
Shrimp—			Lime—do	1,225	9,188
Dry pack—do	3,656	23,595	Other products		420
Wet pack—do	14,244	81,359	Total		882,261

[1] A standard case contains 4 dozen 5-ounce cans of oysters, 4 dozen 5-ounce cans in the dry pack, or 4 dozen 5¾-ounce cans in the wet pack of shrimp.

PRODUCTS PREPARED BY THE FISHERMEN

Salted fish	Pounds	Value
Bluefish	200	$16
Mullet	123,000	12,220
Spot	67,500	4,960
Total	190,700	17,196

GEORGIA

The fisheries and related fishery industries of Georgia employed 1,928 persons in 1927, which is 5 per cent less than the number employed in 1923. Of the total 921 were fishermen, 29 were employed on transporting vessels, 210 in the wholesale trade, and 768 in the prepared-products and by-products industries.

The catch amounted to 47,607,224 pounds, valued at $697,165. This is an increase of 19 per cent in amount and 4 per cent in value as compared with the catch and its value for 1923. Of the total value of the catch, that of shrimp accounted for 67 per cent; menhaden, 17 per cent; oysters, 6 per cent; and shad, 6 per cent. Of the total quantity, menhaden accounted for 72 per cent; shrimp, 26 per cent; and oysters, 2 per cent.

Operating units.—The catch of fishery products in Georgia during 1927 was taken by 921 fishermen, who used 517 motor and other small boats, 31 motor vessels with a capacity of 390 net tons, and 9 types of major gear.

Fisheries of Georgia, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Purse seines	Gill nets	Fyke nets	Cast nets	Lines	Shrimp trawls	Dredges	Tongs	Grabs	Total, exclusive of duplication
Fishermen:											
On boats or shore—											
Regular	12		200	8	29	67	324		141	178	671
Casual			124								124
On vessels		60				8	52	6	6		126
Total	12	60	324	8	29	75	376	6	147	178	921
Boats:											
Motor			2			2	162		6	17	175
Other	6		165	4	29	67			113	160	342
Vessels (motor):											
5 to 10 tons							24				24
11 to 20 tons						1	2	1	1		4
41 to 50 tons		1									1
51 to 60 tons		1									1
61 to 70 tons		1									1
Total		3				1	26	1	1		31
Net tonnage		166				14	196	14	14		390
Apparatus:											
Number	6	3	186	20	28	444	188	2	147	191	
Length, yards	1,998	600									
Square yards			110,441								
Yards at mouth							3,760	3			
Hooks, snoods, or baits						532					

Catch by gear.—Two types of gear accounted for 97 per cent of the products taken in the fisheries of Georgia during 1927. Of this amount, purse seines took 72 per cent of the catch (exclusively menhaden) and shrimp trawls, 25 per cent (only shrimp).

Fisheries of Georgia, 1927

CATCH: BY GEAR

Species	Haul seines		Purse seines		Gill nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Croaker					3,000	$150
Drum, red, or redfish					1,000	50
Flounders					200	10
Hickory shad					14,200	710
King whiting					2,600	130
Menhaden			34,102,000	$119,357		
Mullet					5,733	320
Shad					187,380	43,578
Spot					800	40
Squeteague or "sea trout," speckled					15,766	2,210
Striped bass					4,555	410
Sturgeon					2,625	303
Terrapin	1,440	$540				
Total	1,440	540	34,102,000	119,357	237,859	47,911

Fisheries of Georgia, 1927—Continued

CATCH: BY GEAR—Continued

Species	Fyke nets		Cast nets		Lines	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Catfish	20,000	$1,200			35	$8
Eels					10	1
Groupers					26,272	1,527
Grunts					200	18
Jewfish					2,388	110
Mullet			2,800	$168		
Porgies					3,402	281
Sea bass					47,694	4,551
Snapper, red					63,643	6,435
Squeteague or "sea trout", speckled			275	41	1,500	225
Striped bass					800	80
Crabs, hard					58,800	2,395
Shrimp			40,000	1,600		
Total	20,000	1,200	43,075	1,809	204,744	15,631

Species	Shrimp trawls		Dredges		Tongs and grabs		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Shrimp	12,239,969	$467,015						
Clams, hard					800	$100		
Oysters, market, public			21,000	$1,500	504,266	32,906	46,039	$1,973
Oysters, market, private					186,032	7,223		
Total	12,239,969	467,015	21,000	1,500	691,098	40,229	46,039	1,973

Fisheries by counties.—Fishing was prosecuted in the marine waters of seven counties in Georgia in 1927. Ranked according to value, the fisheries of Glynn County were most important, accounting for 19 per cent of the total quantity and 51 per cent of the total value of the catch. Camden County ranked next, accounting for 73 per cent of the total quantity and 23 per cent of the total value. Chatham County ranked third in importance, with 5 per cent of the total quantity and 18 per cent of the total value. Following in order were McIntosh, Bryan, Liberty, and Effingham Counties.

Fisheries of Georgia, 1927

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Bryan	54					27	39,200	$9,240
Camden	118		3	166	16	26	34,836,957	157,411
Chatham	182	118	7	61	34	174	2,529,012	125,154
Effingham		6				3	3,920	924
Glynn	305		18	133	100	35	8,954,659	356,643
Liberty	52		1	14	1	33	42,000	3,009
McIntosh	86		2	16	24	44	1,201,476	44,793
Total	797	124	31	390	175	342	47,607,224	697,165

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—There were 29 persons in Georgia in 1927 engaged primarily in transporting the catch from the fishing grounds to market. In this trade there were 15 registered motor vessels with

a total capacity of 140 net tons. The size of vessel in most popular use ranged from 5 to 10 net tons.

Wholesale trade.—There were 14 wholesale establishments in Georgia in 1927 engaged chiefly in handling fresh fish and shellfish. Of the total, 11 were in Chatham County and 3 in Glynn County. These establishments employed 210 persons, who received $104,299 in salaries and wages.

Prepared and by-products trade.—There were 12 establishments in Georgia in 1927 engaged in canning and curing fishery products and in the manufacture of fishery by-products. These employed 768 persons, who received $161,535 in salaries and wages. The products manufactured, which were principally canned shrimp and menhaden products, were valued at $994,594. This is nearly 28 per cent of the production of prepared fishery products and by-products manufactured in the South Atlantic States. Georgia ranks second in the output. Detailed statistics of most of these manufactured items may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

Industries related to the fisheries of Georgia, 1927

TRANSPORTING

Items	Number
Men on transporting vessels	29
Transporting vessels (motor):	
5 to 10 tons	11
11 to 20 tons	4
Total	15
Net tonnage	140

WHOLESALE FISHERY TRADE

Items	Chatham	Glynn	Total
Establishments	11	3	14
Persons engaged:			
Proprietors or managers	13	5	18
Salaried employees	18	4	22
Wage earners	40	130	170
Paid to salaried employees	$42,180	$4,545	$46,725
Paid to wage earners	$37,953	$19,621	$57,574

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number
Establishments	12
Persons engaged:	
Proprietors or managers	14
Salaried employees	8
Wage earners	746
Salaries paid	$18,410
Wages paid	$143,125
Total salaries and wages paid	$161,535

Products	Quantity	Value
Canned:		
Oysters—standard cases [1]	9,339	$46,755
Shrimp—		
Dry pack—do	30,871	196,201
Wet pack—do	79,715	488,097
Miscellaneous products [2]		263,541
Total		994,594

[1] A standard case contains 4 dozen 5-ounce cans of oysters, 4 dozen 5-ounce cans in the dry pack, or 4 dozen 5¾-ounce cans in the wet pack of shrimp.

[2] Includes canned clam chowder, canned terrapin meat and terrapin soup, and acidulated scrap and oil from menhaden.

EAST COAST OF FLORIDA[5]

The fisheries and related fishery industries of the east coast of Florida employed 3,817 persons in 1927, which is 36 per cent more than the number employed in 1923. Of the total, 2,947 were fishermen, 7 were employed on transporting vessels, 644 in the wholesale trade, and 219 in the prepared-products and by-products industries.

The catch amounted to 60,222,023 pounds, valued at $1,870,926. This is a decrease of 31 per cent in amount and an increase of 9 per cent in value as compared with the catch and its value for 1923. Of the total value of the catch, that of shrimp accounted for 32 per cent; mullet, 12 per cent; kingfish or "king mackerel," 12 per cent; Spanish mackerel, 8 per cent; bluefish, 5 per cent; and squeteagues or "sea trout," 5 per cent. Of the total quantity, that of menhaden accounted for 41 per cent; shrimp, 25 per cent; mullet, 11 per cent; kingfish or "king mackerel," 6 per cent; catfish, 3 per cent; and Spanish mackerel, 3 per cent.

Operating units.—The catch of fishery products on the east coast of Florida during 1927 was taken by 2,947 fishermen, who used 2,254 motor and other small boats, 19 motor vessels with a capacity of 312 net tons, and 11 types of major gear.

Fisheries of the east coast of Florida, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Purse seines	Gill nets	Pound nets	Trammel nets	Dip nets	Lines
Fishermen:							
On boats or shore—							
Regular	240		1,027	7	4	59	751
Casual	7						61
On vessels		111					2
Total	247	111	1,027	7	4	59	814
Boats:							
Motor	57		462	5		35	445
Other	178		578	6	4	35	228
Vessels (motor):							
5 to 10 tons							1
11 to 20 tons		1					
41 to 50 tons		2					
81 to 90 tons		1					
Total		4					1
Net tonnage		176					6
Apparatus:							
Number	92	4	1,028	14	4	35	6,879
Length, yards	49,800	1,260					
Square yards			1,200,860		1,000		
Hooks, snoods, or baits							95,783

[5] See pp. 515 to 524 for complete statistics for Florida.

Fisheries of the east coast of Florida, 1927—Continued

OPERATING UNITS: By gear—Continued

Items	Shrimp trawls	Crawfish traps	Crab traps	Tongs	Rakes	Minor apparatus [1]	By hand	Total, exclusive of duplication
Fishermen:								
On boats or shore—								
Regular	929	11	12	50		69	45	2,717
Casual				12	12	2		82
On vessels	35	2						14
Total	964	13	12	62	12	71	45	2,947
Boats:								
Motor	352	6	12	6	2	36		1,179
Other		3		47	6	38	45	1,075
Vessels (motor):								
5 to 10 tons	10	1						11
11 to 20 tons	4							4
41 to 50 tons								2
81 to 90 tons								1
Total	14	1						15
Net tonnage	130	6						312
Apparatus:								
Number	366	499	275	62	12	123		
Yards at mouth	8,539							

[1] Includes crawfish hooks, cast nets, and fish traps.

Catch by gear.—Four types of gear accounted for 94 per cent of the products taken in the fisheries of the east coast of Florida during 1927. Listed in the order of their importance they were purse seines, which accounted for 42 per cent of the catch; shrimp trawls, 25 per cent; gill nets, 19 per cent; and lines, 8 per cent. The catch by purse seines consisted principally of menhaden; by shrimp trawls, principally shrimp; by gill nets, chiefly mullet, Spanish mackerel, bluefish, and squeteagues or "sea trout"; and by lines, largely kingfish or "king mackerel."

Fisheries of the east coast of Florida, 1927

CATCH: By gear

Species	Haul seines		Purse seines		Gill nets		Pound nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	69,092	$770					143,800	$1,438
Angelfish or spadefish			500	$20	8,430	$264		
Black bass	103,954	11,438						
Bluefish			50,000	5,000	671,900	80,322		
Bluerunner or hardtail			3,000	120	82,440	2,367		
Catfish	1,334,233	53,368					89,800	3,592
Crappie	359,229	25,323					5,580	391
Crevalle	900	41	1,000	40	171,950	5,012		
Croaker	700	33			21,750	648		
Drum, black	2,700	91			40,050	871		
Drum, red, or redfish	10,500	480	200	8	96,050	4,828		
Flounders	650	33			6,600	266		
Groupers					100	5		
Grunts			1,500	60	11,150	351		
Hickory shad	39,386	1,969			2,860	168		
Hogfish			400	16				
King whiting or "kingfish"	36,400	1,832			67,500	4,004		
Menhaden			24,876,200	79,604				
Moonfish					3,500	90		
Mullet	17,300	735	175,000	3,500	6,371,548	227,633		
Permit					8,890	263		
Pigfish	500	24			153,650	5,700		
Pinfish	1,200	58	200	8	297,240	8,973		
Pompano	50	10			214,900	43,825		
Sea bass					4,000	160		
Sergeantfish or snook	100	4			192,000	9,209		
Shad	170,222	28,496			177,336	35,172		

Fisheries of the east coast of Florida, 1927—Continued

CATCH: BY GEAR—Continued

Species	Haul seines		Purse seines		Gill nets		Pound nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Sheepshead	500	$25	400	$16	40,280	$1,546		
Snapper, mangrove			400	16	22,860	1,041		
Snapper, mutton					104,100	3,914		
Spanish mackerel			12,500	1,000	1,817,323	141,606		
Spot	1,050	43			396,450	10,401		
Squeteagues or "sea trout"	18,000	1,820			653,945	65,654		
Strawberry bass					5,000	250		
Striped bass					1,650	412		
Sunfish	296,164	9,054					900	$27
Yellowtail			4,900	196	11,200	826		
Crabs, hard					4,400	132		
Turtles	5,758	86						
Total	2,468,588	135,733	25,126,200	89,604	11,661,852	655,913	240,080	5,448

Species	Trammel nets		Dip nets		Lines		Shrimp trawls	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Amberfish					9,200	$360		
Angelfish or spadefish					2,100	75		
Black bass					13,700	1,374		
Bluefish					37,900	4,555	12,000	$960
Bluerunner or hardtail					2,940	115		
Catfish	10,000	$400			491,200	19,688		
Crappie	1,000	100			1,250	95		
Crevalle					24,650	636	2,000	80
Croaker					15,100	812	1,500	60
Drum, black					38,350	1,977	2,500	50
Drum, red, or redfish					55,050	3,767	1,500	60
Flounders					9,000	446	5,000	240
Groupers					59,800	2,741		
Grunts					11,950	511		
Hogfish					2,400	138		
Jewfish					15,100	338		
Kingfish or king mackerel					3,330,810	229,451		
King whiting or "kingfish"					4,700	308	60,000	2,820
Margatefish					1,100	44		
Mullet	15,000	750						
Pigfish					500	15		
Pinfish					5,460	197		
Pompano					4,000	875		
Porgies					12,000	470		
Sea bass					27,700	1,802		
Sergeantfish or snook					33,350	1,566		
Sheepshead					12,770	627	500	20
Snapper, mangrove					17,540	1,378		
Snapper, mutton					24,800	2,820		
Snapper, red					59,200	5,868		
Spanish mackerel					91,500	7,368		
Spot					21,750	1,135	1,500	60
Squeteagues or "sea trout"					182,000	19,820	15,000	1,500
Sunfish	400	20			1,000	50		
Yellowtail					3,000	180		
Crabs, hard					69,000	5,000		
Sea crawfish or spiny lobster			105,936	$7,416				
Shrimp							14,773,385	592,007
Total	26,400	1,270	105,936	7,416	4,691,870	316,602	14,874,885	597,857

Species	Crawfish traps		Tongs and rakes		Minor apparatus [1]		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Black bass					500	$50		
Crappie					1,000	40		
Crevalle					7,300	616		
Mullet					4,000	160		
Sunfish					6,800	244		
Crabs, hard					48,000	3,600		
Crabs, stone					6,400	576		
Sea crawfish or spiny lobster	129,600	$12,084			25,000	1,750		
Shrimp					6,000	300		
Clams, hard			3,200	$400			6,400	$600
Oysters, market, public			254,282	22,958			396,900	6,860
Oysters, market, private			116,830	8,345			14,000	2,500
Total	129,600	12,084	374,312	31,703	105,000	7,336	417,300	9,960

[1] Includes catch of crab traps, crawfish hooks, cast nets, and fish traps.

Fisheries by counties.—Fishing was prosecuted in the marine waters of 15 counties on the east coast of Florida in 1927. Ranked according to value, the fisheries of Nassau County were most important, accounting for 55 per cent of the total catch and 21 per cent of the total value of the catch. St. John County was next in importance, accounting for 12 per cent of the total catch and 15 per cent of the total value. Other counties accounting for catches in excess of $100,000 in value were Palm Beach, St. Lucie, Martin, Brevard, and Putnam.

Fisheries of the east coast of Florida, 1927

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Brevard	199				101	165	3,784,426	$162,021
Clay	40	26			12	46	410,520	16,718
Dade	196		2	17	137	83	1,231,346	60,021
Duval	252	25			95	163	1,278,600	78,991
Flagler		3				3	5,250	413
Indian River	89				47	66	1,270,830	62,911
Marion	12				3	9	172,033	8,688
Martin	159				77	68	2,358,850	166,503
Nassau	537		10	234	123	70	33,009,565	401,312
Palm Beach	206				156	9	2,940,750	220,877
Putnam	207	10			48	185	2,204,219	125,541
St. John	607	12	5	41	242	16	7,047,820	285,031
St. Lucie	209				108	70	2,859,084	185,194
Seminole	49				2	31	224,000	19,375
Volusia	103	6	2	20	28	91	1,424,730	77,330
Total	2,865	82	19	312	1,179	1,075	60,222,023	1,870,926

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—There were only seven persons in 1927 engaged on the east coast of Florida primarily in transporting the catch from the fishing grounds to market. In this trade there were three registered motor vessels with a total capacity of 30 net tons. These vessels varied from 5 to 20 net tons.

Wholesale trade.—There were 87 wholesale establishments on the east coast of Florida engaged chiefly in handling fresh or frozen fishery products. This is 60 per cent of the total number of such establishments in the South Atlantic section. These establishments employed 644 persons, who received $273,762 in salaries and wages

Prepared and by-products trade.—There were five establishments on the east coast of Florida in 1927 engaged in the prepared fishery products and by-products industries. These employed 219 persons, who received $120,160 in salaries and wages. The products manufactured, which were principally canned shrimp and menhaden products, were valued at $666,599. Detailed statistics of most of these manufactured items may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

Industries related to the fisheries of the east coast of Florida, 1927

TRANSPORTING

Item	Number
Men on transporting vessels	7
Transporting motor vessels:	
5 to 10 tons	1
11 to 20 tons	2
Total	3
Net tonnage	30

WHOLESALE FISHERY TRADE

Item	Brevard and Volusia	Duval and Clay	Dade and Palm Beach	Indian River and St. Lucie	Martin	Nassau	Putnam	St. John	Total
Establishments	11	13	8	9	7	14	7	18	87
Persons engaged:									
Proprietors or managers	14	17	13	12	7	19	9	23	114
Salaried employees	1	11	8	4	3	2		6	35
Wage earners	18	40	23	17	8	165	18	206	495
Paid to salaried employees	$1,560	$24,975	$14,400	$6,440	$6,200	$2,375		$8,185	$64,135
Paid to wage earners	$14,301	$27,394	$24,812	$14,480	$7,280	$42,540	$14,170	$64,650	$209,627

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Item	Number	Item	Amount
Establishments	5	Salaries paid	$16,633
Persons engaged:		Wages paid	103,527
Proprietors or managers	7		
Salaried employees	11	Total salaries and wages paid	120,160
Wage earners	201		

Product	Quantity	Value	Products	Quantity	Value
Canned shrimp, dry and wet packs—standard cases [1]	40,185	$342,751	Miscellaneous products [2]		$323,848
			Total		666,599

[1] A standard case contains 4 dozen 5¾-ounce cans in the wet pack or 4 dozen 5-ounce cans in the dry pack.

[2] Includes canned oysters, dry and green scrap and oil from menhaden, and smoked mullet.

HISTORICAL REVIEW

During the period 1880 to 1927 there were conducted 11 general statistical surveys of the fisheries of the South Atlantic States. The infrequency of these surveys leaves much to be desired in the making of a thorough statistical analysis, but a rather clear picture of the trend of these fisheries may be obtained from the records published in comparable form herewith. The discussion of the trends of the individual species, which follows, is based on the statistics that are available, but it is pointed out the possibility that in certain of the years for which there are no data there may have been unusual fluctuations. In some of the surveys prior to 1889 the fisheries of certain States were not canvassed, and in certain of the States that were canvassed several species were included with "miscellaneous fish" or

"all other species." For this reason totals are not usually shown prior to 1889.

Total catch.—Beginning with a total catch of 42,952,000 pounds for the South Atlantic district in 1880, there were constant increases in production until 1918, when the greatest production was registered for which there are records. It amounted to 332,614,000 pounds, its large size being due mainly to a large catch of menhaden. The production in 1927 amounted to 260,669,000 pounds.

Alewives.—The catch of alewives in the past 48 years has varied from barely 10,000,000 pounds in 1923 to more than 22,000,000 pounds in 1890. The catch in 1880 amounted to 16,055,000 pounds and that in 1927 to 14,124,000 pounds.

Bluefish.—The smallest catch of bluefish on record was that made in 1880, when 830,000 pounds were taken. In the years for which there are complete records since that time the catch has been consistently in excess of 1,000,000 pounds until 1918, when it fell to 892,000 pounds. The largest production was recorded in 1923, when it amounted to 2,005,000 pounds. The catch declined to 1,637,000 pounds in 1927.

Butterfish.—The earliest record for this species was for the year 1897, when 95,000 pounds were taken. The catch varied but little until 1908, when 1,302,000 pounds were taken, which is the largest production on record. The catch decreased considerably in 1918 and recovered but slightly in 1923. In 1927 the second largest catch on record was made, amounting to 1,280,000 pounds.

Croaker.—From a catch of 2,002 pounds in 1902 the trend of the production of croaker has been upward, reaching the peak of 3,987,000 pounds in 1927. An outstanding deviation from this general trend was noted in 1918, when only 533,000 pounds were taken.

Black drum.—Beginning with 228,000 pounds in 1889 the catch varied but little until 1918. In that year it amounted to 536,000 pounds. Since that time very small catches have been recorded. In 1927 the amount taken was 98,000 pounds.

Red drum or redfish.—The trend of this fishery has been downward with but one exception. Beginning with 810,000 pounds in 1889, the smallest catch on record was registered in 1927, when 270,000 pounds were taken. The unparalleled production of 1,421,000 pounds was effected in 1908.

Eels.—The catch of eels in 1889 amounted to only 55,000 pounds. Beginning with this low mark, the catch increased in the following few years, and the highest production on record was effected in 1902, when 512,000 pounds were taken. Since 1902 the trend has been downward, the catch in 1927 amounting to 160,000 pounds.

Flounders.—The smallest catch of flounders was made in 1889, when 48,000 pounds were taken. Increases were constant until the peak was reached in 1908. In that year the catch amounted to 514,000 pounds. In 1918 the catch was barely one-fourth of this amount. Partial recoveries were effected in subsequent years, and in 1927 the catch amounted to 384,000 pounds.

Menhaden.—Beginning with a catch of 8,761,000 pounds in 1889, almost constant increases were made until 1918, when by far the largest catch on record was made, amounting to 257,759,000 pounds. In 1923 production fell to 148,181,000 pounds, but increased in 1927

to 157,965,000 pounds. This fishery is by far the most important among those of the South Atlantic in point of quantity.

Mullet.—The catch of mullet amounted to only 4,369,000 pounds in 1880. During the next few years the catch increased, and by 1902 it amounted to 16,035,000 pounds. Since then somewhat less has been taken annually, in 1927 amounting to 11,378,000 pounds.

Pompano.—Following catches of less than 50,000 pounds in 1889 and 1890, the production in 1897 amounted to 254,000 pounds and continued between 250,000 pounds and 300,000 pounds until 1918, when it dropped to 142,000 pounds. In 1923 the catch was 111,000 pounds, but in 1927 it again climbed, 238,000 pounds being recorded.

Sea bass.—The catch of sea bass in 1889 amounted to 934,000 pounds. This production has not been equalled in subsequent years, a downward trend being noted. The catch in 1927 amounted to 521,000 pounds.

Shad.—Following a catch of 3,933,000 pounds in 1880, the trend was upward until 1897, when the peak of 11,268,000 pounds was reached. Since 1897 the trend has been downward, the catch in 1927 amounting to 3,104,000 pounds.

Sheepshead.—The peak of the production of sheepshead was reached in 1908, when the catch amounted to 1,431,000 pounds. There followed rather consistent increases from 1889, when 495,000 pounds were taken. Since 1908 the catches have decreased to only 77,000 pounds in 1927.

Spanish mackerel.—The catch of this species in 1889 amounted to only 82,000 pounds. Consistent increases were effected until 1918, when 3,211,000 pounds were taken, which is the largest production on record. The production in 1927 decreased to 2,121,000 pounds.

Spot.—There have been constant increases in this fishery since 1902, when 1,031,000 pounds were taken. In 1927 the catch amounted to 2,597,000 pounds.

Squeteagues or "sea trout."—In 1880 the catch of this species amounted to 1,827,000 pounds, reached a high peak of 8,628,000 pounds in 1908, and then decreased to 5,475,000 pounds in 1927.

Striped bass.—Starting with a production of 560,000 pounds in 1889, this fishery grew consistently until 1902, when the peak of 1,187,000 pounds was reached. The production in the next few years was much less, that in 1918 being the smallest on record. The fishery recovered somewhat in 1927, when 745,000 pounds were taken.

Sturgeon.—The general trend of the sturgeon fishery has been downward. In 1880 the catch amounted to 1,055,000 pounds, which is the largest catch on record. This production was nearly reached again in 1897, when 1,042,000 pounds were taken. Except for that year, the production has been less in each survey. In 1927 only 43,000 pounds were taken.

Crabs.—The catch of crabs in 1927 amounted to 1,422,000 pounds, a production that had never been reached previously. The catch that approached nearest to that in 1927 was made in 1897, when 1,216,000 pounds were taken. The general trend has been upward since 1889, when the catch amounted to 182,000 pounds.

Shrimp.—As the most valuable fishery in the South Atlantic States, that for shrimp has increased steadily from a production of 627,000 pounds in 1897 to 29,992,000 pounds in 1927. Prior to 1897 the catch had shown little fluctuation.

Hard clams.—Beginning with a production of 387,000 pounds in 1880 there were minor fluctuations in the catch until 1897, when production amounted to 1,131,000 pounds. In 1902 a yet greater catch was made, amounting to 1,415,000 pounds. Since 1902 the production has decreased, in 1927 amounting to 373,000 pounds.

Oysters, market.—The smallest catch on record was made in 1880, when 2,170,000 pounds were taken. Following this low production large increases were noted until 1908, when 29,973,000 pounds were taken. This was the largest production that has been yet recorded. The production in 1927 amounted to 10,020,000 pounds.

Scallops.—This fishery has shown a steady increase. In 1887 the catch amounted to 4,000 pounds. In 1927 it amounted to 835,000 pounds.

Considered generally, the catches of butterfish, croaker, flounders, menhaden, mullet, pompano, Spanish mackerel, spot, squeteagues or "sea trout," crabs, shrimp, and scallops have increased; the catches of alewives, bluefish, eels, and striped bass have remained fairly constant; and the catches of black drum, red drum or red fish, sea bass, shad, sheepshead, sturgeon, hard clams, and oysters have shown a downward trend.

Fisheries of the South Atlantic States, 1880 to 1927

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Year	North Carolina		South Carolina		Georgia		Florida (east coast)		Total	
1880	32,249	$846	6,143	$212	2,273	$120	2,287	$78	42,952	$1,256
1887	45,125	773	4,076	158	1,883	81	[1]	[1]	[1]	[1]
1888	43,023	776	4,181	164	1,958	83	[1]	174	[1]	1,197
1889	45,546	950	4,879	200	2,644	106	5,982	199	59,051	1,455
1890	51,799	1,028	4,945	203	2,994	124	7,464	220	67,202	1,575
1897	64,234	1,316	5,280	210	4,993	171	5,883	136	80,390	1,833
1902	67,585	1,740	8,174	263	11,103	359	19,584	478	106,446	2,840
1908	101,422	1,776	14,104	288	14,828	701	36,521	1,269	166,875	4,034
1918	210,502	2,979	3,747	208	37,154	416	81,211	1,746	332,614	5,349
1923	95,192	2,414	6,763	285	39,896	668	86,896	1,720	228,747	5,087
1927	144,460	2,777	8,374	350	47,607	697	60,222	1,871	260,669	5,695

[1] Figures not available.

CATCH OF CERTAIN SPECIES: BY STATES

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Alewives					Bluefish				
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1880	15,520	400	125	10	16,055	600	200	5	25	830
1887	23,747		25			761	158	7	[1]	
1888	20,451		24			847	151	6	[1]	
1889	19,316	37	36		19,389	1,078	110		5	1,193
1890	22,112	29	24	10	22,175	1,539	100		7	1,646
1897	20,839	2	25	41	20,907	1,910	40		46	1,996
1902	15,173		22	406	15,601	1,049	1		80	1,130
1908	12,530		32	1,220	13,782	1,258	7		372	1,637
1918	17,356	10		692	18,058	323	3	5	561	892
1923	8,989			1,062	10,051	897	7		1,101	2,005
1927	13,911			213	14,124	852	13		772	1,637

[1] Statistics not available.

Fisheries of the South Atlantic States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Butterfish,[2] North Carolina	Croaker					Drum, black				
		North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1887		[1]	[1]	[1]	[1]			90	10	[1]	
1888		[1]	[1]	[1]	[1]			75	11	[1]	
1889		328	[1]	[1]	[1]			170	17	41	228
1890		354	[1]	[1]	[1]			185	15	28	228
1897	95	1,295	[1]	[1]	[1]		51	215	14	17	297
1902	83	1,939	27	29	7	2,002	67	75	25	20	187
1908	1,302	1,177	85	46	92	1,400					
1918	731	387	16	6	124	533		5		531	536
1923	820	2,262	26		22	2,310	2	13		47	62
1927	1,280	3,932	13	3	39	3,987	11	3		84	98

Year	Drum, red, or redfish					Eels		
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	Georgia	Total
1887	129	55	20	[1]		6		
1888	140	51	21	[1]		7		
1889	515	91	32	172	810	55		55
1890	219	88	39	171	517	161		161
1897	179	110	24	236	549	97	5	102
1902	144	102	35	115	396	507	5	512
1908	[3] 343	109	151	818	1,421	258	6	264
1918	[3] 100	1	2	369	472	175		175
1923	245	31	1	122	399	180		180
1927	99	7	1	163	270	160		160

Year	Flounders					Menhaden			
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	Georgia	Florida (east coast)	Total
1887				[1]		14,756			
1888				[1]		13,844			
1889	48				48	8,753		8	8,761
1890	49				49	12,410			12,410
1897	174		6		180	11,310			11,310
1902	262	2	3	49	316	18,862			18,862
1908	403	5	7	99	514	57,412			57,412
1918	91	16	11	13	131	179,911	29,485	48,363	257,759
1923	333	28		6	367	63,290	26,973	57,918	148,181
1927	349	14		21	384	98,987	34,102	24,876	157,965

[1] Statistics not available.
[2] Includes harvestfish.
[3] Includes some black drum.

NOTE.—Prior to 1889 some of the above species were often included under the heading "Miscellaneous fish" or "All other fish"; therefore, the total for certain species is not shown for certain years of this period.

Fisheries of the South Atlantic States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Mullet					Pompano			
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Florida (east coast)	Total
1880	3,368	232	106	663	4,369				
1887	2,461	400	47	(1)				(1)	
1888	2,248	341	48	(1)				(1)	
1889	4,252	464	57	1,216	5,989	8		12	20
1890	4,890	553	53	1,567	7,063	10		30	40
1897	4,716	61	56	2,449	7,282	53	5	196	254
1902	8,429	139	126	7,341	16,035	20	5	265	290
1908	6,013	708	194	8,573	15,488	11	4	276	291
1918	1,286	272	11	10,418	11,987	9		133	142
1923	1,933	532	4	6,198	8,667	50		61	111
1927	4,325	461	9	6,583	11,378	13	6	219	238

Year	Sea bass					Shad				
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1880						3,221	208	252	252	3,933
1887	15	889	4	(1)		4,783	366	255	(1)	
1888	15	910	7	(1)		5,725	433	263	1,448	7,869
1889	29	886	8	11	934	5,403	577	356	2,051	8,387
1890	33	826	10	10	879	5,815	563	400	2,654	9,432
1897	189	632		6	827	8,963	506	788	1,011	11,268
1902	57	710	76	30	873	6,567	434	1,029	1,819	9,849
1908	72	491	233	110	906	3,942	464	1,333	2,833	8,572
1918	112	132	293	41	578	1,657	167	101	964	2,889
1923	102	218	104	4	428	2,370	184	134	503	3,191
1927	316	125	48	32	521	2,387	182	187	348	3,104

Year	Sheepshead					Spanish mackerel				
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1887	202	101	8	(1)					(1)	
1888	212	111	8	(1)					(1)	
1889	187	39	5	264	495	82				82
1890	202	39	5	274	520	100				100
1897	271	36	25	390	722	331	10	18	3	362
1902	155	27	50	404	636	354			659	1,013
1908	249	20	64	1,098	1,431	457			1,228	1,685
1918	26	2		104	132	149			3,062	3,211
1923	52	1		32	85	183			2,469	2,652
1927	23			54	77	200			1,921	2,121

[1] Statistics not available.

NOTE.—Prior to 1889 some of the above species were often included under the heading "Miscellaneous fish" or "All other fish"; therefore, the total for certain species is not shown for certain years of this period.

Fisheries of the South Atlantic States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Spot					Squeteagues or "sea trout"				
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1880						1,120	470	122	115	1,827
1887	[4]88	[4]52	[4]11	(1)		909	217	67	(1)	
1888	[4]90	[4]57	[4]10	(1)		946	207	67	(1)	
1889	441	[4]46	[4]14	[4]26		1,971	116	130	243	2,460
1890	499	[4]42	[4]14	[4]24		2,131	103	144	235	2,613
1897	917	[4]49		[4]23		3,174	80	55	516	3,825
1902	977	22		32	1,031	3,984	86	83	899	5,052
1908	852	66		130	1,048	4,648	183	140	3,657	8,628
1918	1,258	75	1	393	1,727	3,361	59	40	1,645	5,105
1923	1,790	132	1	72	1,995	3,984	70	5	1,198	5,257
1927	1,959	216	1	421	2,597	4,534	54	18	869	5,473

Year	Striped bass					Sturgeon				
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1880						437	261	354	3	1,055
1887	506	4	11			238	182	192	(1)	
1888	567	3	11			270	251	174	(1)	
1889	536	11	13		560	228	[5]285	[5]212	43	768
1890	574	12	9		595	175	[5]216	[5]84	30	505
1897	845	10	9		864	[5]404	[5]481	[5]157		1,042
1902	1,175	10	2		1,187	145	94			239
1908	510	5	9	9	533	62		100	55	217
1918	287				287	8	118	39		165
1923	477				477	19	50	32		101
1927	738		5	2	745	27	13	3		43

Year	Crabs					Shrimp				
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total
1880	11	42	7			63	630	56	72	821
1887	47	76	45	(1)		120	338	185	(1)	
1888	47	69	44	(1)		124	359	191	(1)	
1889	50	86	43	3	182	135	380	150	78	743
1890	47	93	48	4	192	144	372	162	66	744
1897	1,027	110	75	4	1,216	146	374	68	39	627
1902	203	96	80	6	385	84	370	344	3,013	3,811
1908	390	33	196	146	765	371	452	528	4,346	5,697
1918	379	18	8	52	457	940	55	5,793	8,868	15,656
1923	514	9	120	72	715	1,658	355	10,668	11,024	23,705
1927	1,225	10	59	128	1,422	1,276	1,657	12,280	14,779	29,992

[1] Statistics not available.
[4] Includes croakers.
[5] Includes caviar.

NOTE.—Prior to 1889 some of the above species were often included under the heading "Miscellaneous fish" or "All other fish"; therefore, the total for certain species is not shown for certain years of this period.

Fisheries of the South Atlantic States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Clams, hard					Oysters, market					Scallops, North Carolina
	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	North Carolina	South Carolina	Georgia	Florida (east coast)	Total	
1880	310	48	24	5	387	1,190	350	490	140	2,170	----
1887	78	----	----	(1)	----	1,491	264	771	(1)	----	4
1888	148	----	----	(1)	----	1,433	282	844	(1)	----	4
1889	155	----	3	5	163	7,011	305	1,142	436	8,894	16
1890	226	----	4	6	236	5,651	442	1,570	681	8,344	18
1897	938	185	3	5	1,131	6,012	1,504	3,406	363	11,285	118
1902	1,175	225	10	5	1,415	7,160	4,828	8,568	2,163	22,719	13
1908	726	76	43	57	902	5,275	10,941	10,053	3,704	29,973	(1)
1918	198	1	----	2	201	1,519	2,784	1,110	459	5,872	423
1923	264	86	----	5	355	3,917	5,032	1,720	500	11,169	555
1927	315	47	1	10	373	3,041	5,440	757	782	10,020	835

[1] Statistics not available.

NOTE.—Prior to 1889 some of the above species were often included under the heading "Miscellaneous fish" or "All other fish"; therefore, the total for certain species is not shown for certain years of this period.

FISHERIES OF FLORIDA [6]

Commercial fisheries are prosecuted along the entire length of the Florida seacoast from Fernandina south to Key West and from there north and west to Pensacola, and also in Lake Okeechobee. The fisheries and industries related to the fisheries of Florida employed 10,201 persons during 1927. Of the total, 8,437 were fishermen, 58 were employed aboard transporting vessels, 1,084 in the wholesale trade, and 622 in the prepared-products and by-products industries. The catch amounted to 138,423,198 pounds, valued at $6,423,379. This consisted of 116,402,606 pounds of fish, valued at $4,365,756; 21,420,363 pounds of shellfish, etc., valued at $1,022,489; and 600,229 pounds of sponges, valued at $1,035,134. Of the total, 44 per cent were taken along the east coast, 53 per cent along the west coast, and 3 per cent in Lake Okeechobee.

Operating units.—The catch of fishery products during 1927 was made by 8,437 fishermen, who used 109 motor and 17 sail vessels with a combined capacity of 3,887 net tons; 3,029 motor boats; 3,390 other boats; 253 haul seines with a combined length of 125,074 yards; 6 purse seines with a combined length of 1,860 yards; 2,842 gill nets with a combined area of 2,749,614 square yards; 3,931 pound nets and traps; 319 trammel nets with a combined area of 180,323 square yards; 241 stop nets with a combined length of 54,105 yards; 66 dip nets; 16,183 lines having 115,314 hooks or lures; 454 shrimp trawls with a combined length at their mouths of 9,419 yards; 499 crawfish traps; 275 crab traps; 2 steam dredges; 553 tongs, rakes, and forks; 1,555 crab pots; 291 pieces of sponge apparatus, including 48 diving outfits and 243 sponge hooks; and 97 pieces of miscellaneous gear, such as cast nets, crawfish hooks, and spears.

[6] Detailed statistics of the fisheries along the east coast of Florida are discussed separately on pp. 504 to 508; those for the fisheries along the west coast on pp. 529 to 536; while those for Lake Okeechobee, as well as the statistics of the Florida sponge fishery, are discussed in this section. Statistics for these districts are combined in this section for the convenience of those readers who are interested in statistics covering the entire State.

Fisheries of Florida, 1927

SUMMARY OF CATCH

Products	East coast		West coast		Lake Okeechobee		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Fish	44, 256, 932	$1, 206, 312	67, 779, 259	$2, 958, 411	4, 366, 415	$201, 033	116, 402, 606	$4, 365, 756
Shellfish and miscellaneous products	15, 965, 091	664, 614	6, 055, 501	1, 393, 009			22, 020, 592	2, 057, 623
Total	60, 222, 023	1, 870, 926	73, 834, 760	4, 351, 420	4, 366, 415	201, 033	138, 423, 198	6, 423, 379

OPERATING UNITS

Items	East coast	West coast	Lake Okeechobee	Total
Fishermen:				
On vessels	148	817		965
On shore or boat fisheries—				
Regular	2, 717	4, 332	220	7, 269
Casual	82	121		203
Total	2, 947	5, 270	220	8, 437
Vessels:				
Motor	19	90		109
Tonnage	312	2, 739		3, 051
Sail		17		17
Tonnage		836		836
Boats:				
Motor	1, 179	1, 765	85	3, 029
Other	1, 075	2, 138	177	3, 390
Apparatus:				
Haul seines	92	122	39	253
Yards	49, 800	41, 774	33, 500	125, 074
Purse seines	4	2		6
Yards	1, 260	600		1, 860
Gill nets	1, 028	1, 814		2, 842
Square yards	1, 200, 860	1, 548, 754		2, 749, 614
Pound nets and traps	94	12	3, 825	3, 931
Trammel nets	4	315		319
Square yards	1, 000	179, 323		180, 323
Stop nets		241		241
Yards		54, 105		54, 105
Dip nets	35	31		66
Lines	6, 879	9, 299	5	16, 183
Hooks, snoods, or baits	95, 783	19, 011	520	115, 314
Shrimp trawls	366	88		454
Yards at mouth	8, 539	880		9, 419
Crawfish traps	499			499
Crab traps	275			275
Dredges (steam)		2		2
Tongs, rakes, and forks	74	479		553
Crab pots		1, 555		1, 555
Sponge apparatus		291		291
Minor apparatus [1]	43	54		97

[1] Includes cast nets, crawfish hooks, and spears.

Catch by species.—Based on the value to the fishermen, mullet, with a catch of 31,384,348 pounds, valued at $1,274,653, was the most important of the fish taken. Red snapper was next with a catch of 9,371,867 pounds, valued at $746,089. Spanish mackerel was third with a catch of 6,491,530 pounds, valued at $469,177. Other fishes of importance were squeteague or "sea trout" with 3,452,310 pounds, valued at $340,017; cero and kingfish, 4,584,107 pounds, valued at $309,556; catfish, 4,253,860 pounds, valued at $185,300; groupers, 4,547,561 pounds, valued at $141,834; menhaden, 38,342,694 pounds,

valued at $139,988; bluefish, 1,391,806 pounds, valued at $139,709; and pompano, 646,821 pounds, valued at $129,006. Other species of fish taken were individually valued at under $100,000. Among the shellfish, shrimp was of most importance in value, with a catch amounting to 17,168,859 pounds, valued at $687,443. Next were oysters, with a catch of 2,518,453 pounds (359,779 bushels), valued at $207,512; hard clams were third, with a catch of 963,768 pounds, valued at $43,415; and sea crawfish or spiny lobster were fourth, with a catch of 391,253 pounds, valued at $31,707. Other species of shellfish taken were individually valued at less than $15,000. Among the sponges, sheepswool were most important in value, with a catch of 364,914 pounds, valued at $961,366. Of next importance were the yellow sponges, with a catch of 121,250 pounds, valued at $49,598. Grass sponges followed, with a catch of 102,083 pounds, valued at $19,355.

Catch by gear.—On the east coast, where 60,222,023 pounds of fishery products were taken, purse seines made up 42 per cent of the catch; shrimp trawls, 25 per cent; gill nets, 19 per cent; and lines, 8 per cent. The remaining 6 per cent was taken by miscellaneous types of gear. The catch by purse seines consisted principally of menhaden; that by shrimp trawls was principally shrimp; by gill nets chiefly mullet, Spanish mackerel, bluefish, and squeteague or "sea trout"; and by lines mainly kingfish or "king mackerel."

On the west coast, where 73,834,760 pounds of fishery products were taken, gill nets made up 32 per cent of the catch; lines, 23 per cent; purse seines, 18 per cent; and haul seines, 10 per cent. The remainder of the catch (17 per cent) was caught mostly by trammel nets and shrimp trawls. The catch by gill nets was made up largely of mullet, Spanish mackerel, sharks, and squeteague or "sea trout." That of lines consisted mainly of red snapper, groupers, cero or "kingfish," and squeteague or "sea trout." That of purse seines was made up entirely of menhaden, and that of haul seines consisted mostly of mullet, Spanish mackerel, squeteague or "sea trout," blue runner, cigarfish, and bluefish.

In Lake Okeechobee, where 4,366,415 pounds of fish were taken, haul seines made up 93 per cent of the catch; traps, 6 per cent; and trot lines, 1 per cent. Over one-half of the catch of the haul seines was catfish, the remainder being sunfish, crappie, and black bass. Over one-half of the catch by traps was sunfish and the remainder crappie, black bass, and catfish. The catch by trot lines consisted entirely of catfish.

Considering the fisheries of the State as a whole, five types of gear accounted for 92 per cent of the catch. Listed in order of importance these were purse seines, which accounted for 28 per cent of the catch; gill nets, 26 per cent; lines, 16 per cent; shrimp trawls, 12 per cent; and haul seines, 10 per cent.

The catch by purse seines consisted almost entirely of menhaden; that by gill nets principally mullet, Spanish mackerel, squeteague or "sea trout," and sharks; that by lines chiefly red snapper, groupers, cero, and kingfish; that by shrimp trawls almost exclusively shrimp; and that by haul seines mainly mullet, catfish, and Spanish mackerel.

Fisheries of Florida, 1927

CATCH OF FISH

Species	East coast		West coast		Lake Okeechobee		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Alewives	212,892	$2,208					212,892	$2,208
Amberfish	9,200	360	11,475	$294			20,675	654
Angelfish or spadefish	11,030	359	47,870	1,802			58,900	2,161
Barracuda			1,000	20			1,000	20
Black bass	118,154	12,862	5,288	585	508,694	$44,351	632,136	57,798
Bluefish	771,800	90,837	620,006	48,862			1,391,806	139,709
Blucrunner or hardtail	88,380	2,602	810,211	19,114			898,591	21,716
Bonito			39,571	951			39,571	951
Butterfish			1,583	39			1,583	39
Catfish	1,925,233	77,048	56,652	3,307	2,271,975	104,945	4,253,860	185,300
Cero and kingfish or "king mackerel"	3,330,810	229,451	1,253,297	80,105			4,584,107	309,556
Cigarfish			310,524	8,796			310,524	8,796
Cobia or crabeater			9,000	460			9,000	460
Crappie	368,059	25,949			654,155	20,634	1,022,214	46,583
Crevalle	207,800	6,425	96,397	2,737			304,197	9,162
Croaker	39,050	1,553	45,342	1,601			84,392	3,154
Drum, black	83,600	2,989	69,967	2,081			153,567	5,070
Drum, red, or redfish	163,300	9,143	776,203	37,360			939,503	46,503
Elops or ten-pounder			2,482	74			2,482	74
Flounders	21,250	985	109,854	6,050			131,104	7,035
Groupers	59,900	2,746	4,487,661	139,088			4,547,561	141,834
Grunts	24,600	922	80,310	3,181			104,910	4,103
Hickory shad	42,246	2,137					42,246	2,137
Hogfish	2,800	154	29,667	968			32,467	1,122
Jewfish	15,100	338	295,159	8,683			310,259	9,021
King whiting or "kingfish"	168,600	8,964	112,824	4,630			281,424	13,594
Ladyfish			152,335	3,999			152,335	3,999
Margatefish	1,100	44					1,100	44
Menhaden	24,876,200	79,604	13,466,494	60,394			38,342,694	139,988
Moonfish	3,500	90	500	20			4,000	110
Mullet	6,582,848	232,778	24,801,500	1,041,875			31,384,348	1,274,653
Permit	8,890	263	52,074	1,695			60,964	1,958
Pigfish	154,650	5,739	35,134	1,384			189,784	7,123
Pilotfish			7,474	224			7,474	224
Pinfish or sailor's choice	304,100	9,236	16,464	616			320,564	9,852
Pompano	218,950	44,710	427,871	84,296			646,821	129,006
Porgies	12,000	470	95,651	3,627			107,651	4,097
Porkfish			12,146	529			12,146	529
Sea bass	31,700	1,962	31,816	2,545			63,516	4,507
Sergeantfish or snook	226,250	10,779	353,831	11,277			580,081	22,056
Shad	347,558	63,668					347,558	63,668
Sharks			1,200,000	9,000			1,200,000	9,000
Sheepshead	54,450	2,234	679,754	27,627			734,204	29,861
Snapper, mangrove	40,800	2,435	186,918	7,095			227,718	9,530
Snapper, mutton	128,900	6,734	32,378	2,530			161,278	9,264
Snapper, red	59,200	5,868	9,312,667	740,221			9,371,867	746,089
Spanish mackerel	1,921,323	149,974	4,570,207	319,203			6,491,530	469,177
Spot	420,750	11,639	139,278	5,394			560,028	17,033
Squeteagues or "sea trout"	868,945	88,794	2,583,365	251,223			3,452,310	340,017
Strawberry bass	5,000	250					5,000	250
Striped bass	1,650	412					1,650	412
Sturgeon			7,669	932			7,669	932
Sunfish	305,264	9,395			931,591	31,103	1,236,855	40,498
Tang			600	24			600	24
Tripletail			178,672	5,436			178,672	5,436
Turbot			1,200	48			1,200	48
Yellowtail	19,100	1,202	160,918	6,409			180,018	7,611
Total	44,256,932	1,206,312	67,779,259	2,958,411	4,366,415	201,033	116,402,606	4,365,756

Fisheries of Florida, 1927—Continued

CATCH OF SHELLFISH AND MISCELLANEOUS PRODUCTS

Products	East coast		West coast		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard	121,400	$8,732	12,200	$1,275	133,600	$10,007
Crabs, stone	6,400	576	57,800	9,700	64,200	10,276
Sea crawfish or spiny lobster	260,536	21,250	130,717	10,457	391,253	31,707
Shrimp	14,779,385	592,307	2,389,474	95,136	17,168,859	687,443
Clams, hard	9,600	1,000	954,168	42,415	963,768	43,415
Oysters, market, public	651,182	29,818	1,736,441	166,849	2,387,623	196,667
Oysters, market, private	130,830	10,845			130,830	10,845
Scallops, sea			12,800	4,800	12,800	4,800
Terrapin			3,200	800	3,200	800
Turtles	5,758	86	36,702	2,696	42,460	2,782
Sponges:						
Grass			102,083	19,355	102,083	19,355
Sheepswool			364,914	961,366	364,914	961,366
Velvet			175	66	175	66
Wire			11,807	4,749	11,807	4,749
Yellow			121,250	49,598	121,250	49,598
Conchs			5,200	433	5,200	433
Mullet roe			116,570	23,314	116,570	23,314
Total	15,965,091	664,614	6,055,501	1,393,009	22,020,592	2,057,623

PRODUCTION OF CERTAIN SHELLFISH SHOWN IN NUMBER AND BUSHELS

Products	East coast		West coast		Total	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Crabs, hard—number	364,200	$8,732	36,600	$1,275	400,800	$10,007
Crabs, stone—do	8,533	576	77,067	9,700	85,600	10,276
Clams, hard—bushels	1,200	1,000	119,271	42,415	120,471	43,415
Oysters, market, public—do	93,026	29,818	248,063	166,849	341,089	196,667
Oysters, market, private—do	18,690	10,845			18,690	10,845
Scallops, sea			2,133	4,800	2,133	4,800

Fisheries by counties.—According to value, the fisheries of Pinellas County were most important during 1927. During the year 6,506,628 pounds of fishery products were caught, valued at $1,255,236. Sponges, which are taken near Tarpon Springs, constituted the most important fishery item in this county. Other fishery products of importance in value were red snapper, Spanish mackerel, and mullet. Escambia County was second with a catch of 7,076,518 pounds, valued at $465,148. Red snapper, which are taken in the vessel fisheries on the banks in the Gulf of Mexico and landed at Pensacola, contributed to making this county one of the most important in the State. Other fishery products of importance in this county are groupers and mullet. Nassau County was third with a catch of 33,009,565 pounds, valued at $401,312. Shrimp, which are taken in the waters near Fernandina and landed at Fernandina, had the greatest influence in making the fisheries of Nassau County important. The catch of menhaden accounts for most of the remainder. Fourth in importance was Bay County, with a catch of 6,831,669 pounds, valued at $394,073. Fisheries of this county are centered at Panama City, where red snapper is the most important fish landed. Other fish contributing to the county's importance are groupers, mullet, and Spanish mackerel. Franklin County was fifth in importance, with a catch of 6,744,548 pounds, valued at $386,633. Apalachicola is the center of the fisheries in this county, and oysters were the most important fishery product taken there. Others of importance were shrimp, red snapper, and mullet. Other counties where the catch

was valued at over $250,000 were Charlotte, in which Punta Gorda is situated; Monroe, in which Key West is situated; and St. John, in which St. Augustine is situated.

INDUSTRIES RELATED TO THE FISHERIES [7]

Transporting trade.—During 1927 there were 58 persons in Florida engaged in transporting the catch of fishery products from the fishing grounds to market. For freighting these products there were 26 motor vessels in use, having a combined capacity of 418 net tons.

Wholesale trade.—During 1927 fresh and frozen fishery products were marketed through 174 wholesale establishments in Florida. These employed 1,084 persons, who received $604,742 in salaries and wages. Of the total number 87 were on the east coast, 81 on the west coast, and 6 at Lake Okeechobee.

Upon receipt of the fish at the wholesale establishments they are sorted and culled. The majority of the fishery products shipped from Florida are carried in barrels. Some of the fish are dressed (head removed and eviscerated), although the majority are shipped in the round. In packing barrels a layer of crushed ice is put on the bottom and then alternate layers of fish and ice, the last layer of crushed ice being heaped about 5 inches above the rim. Within about an hour of the time the barrel is shipped—by this time the ice has melted somewhat and the contents has settled—ice, crushed or in 12-inch blocks, is added and the barrel headed with matting, burlap, or burlap tarred to paper, which is fastened securely with a hoop nailed around the head. The same procedure is followed in packing boxes, except that it is not possible to add blocks of ice.

Shipments are forwarded from production centers by freight, express, or motor truck. By far the greater quantity is shipped by less-than-carload express. Many less-than-carload express shipments are made from certain localities all destined for one certain city. Only in rare instances are these less-than-carload shipments pooled into a carload shipment, whereby advantage can be taken of the lower transportation rate prevailing on carload shipments. Various wholesale dealers in Jacksonville having selling connections in northern markets pool less-than-carload shipments made by producers in the various sections of the State into carload shipments at Jacksonville. Thus, producers in Florida shipping only a few barrels of fish at a time are able to obtain a carload rate on their products from Jacksonville to destination. Producers taking advantage of this arrangement usually ship on consignment, in which case charges for the less-than-carload transportation of their products to Jacksonville and for the carload transportation to destination are deducted from the selling price of the products. The saving made by these producers is considerable compared with what the less-than-carload transportation charges from production points to destination might be.

Motor trucks are becoming an important factor in moving Florida fisheries products to market. Some producers operate their own motor-delivery system, while others sell to firms operating trucks, which call at the producer's establishment and then deliver the fish to various wholesalers and retailers in the State of Florida and in

[7] See pp. 504 and 529, respectively, for detailed statistics on this subject for the east and west coasts of Florida, and for Lake Okeechobee.

near-by States. It has been estimated that 70,000,000 pounds of fresh and frozen fishery products caught in Florida waters are reshipped to points outside the State. These shipments are consigned largely to other Southern States, although a considerable portion goes as far north and east as New York. The species of fish whose volume is largest in interstate shipments are mullet, Spanish mackerel, sea trout, fresh-water bream, shrimp, red snapper, and catfish.

Prepared-products and by-products industries.—During 1927 there were 42 establishments in Florida engaged in canning and curing fishery products and manufacturing by-products. Of the total, 37 were located on the west coast and 5 on the east coast. These employed 622 persons, who received $418,236 in salaries and wages. The total output of these establishments was valued at $1,474,358. The products canned consisted mainly of shrimp and oysters, although quantities of turtle meat and clam meat, prepared in various ways, also were canned. Mullet was the most important species salted, according to value. Other species salted were blue runner, Spanish mackerel, cigarfish, and grouper. Some mullet was smoked but the production was small. A few firms also put up fresh and frozen prepared fishery products in packages. Several firms manufactured menhaden meal and oil, while others produced shark oil, skins, fins, and meat, and crushed oyster shell for poultry feed and lime.

In addition, 853,400 pounds of fish, valued at $68,881, were salted by fishermen. This consisted mostly of mullet.

Industries related to the fisheries

Items	East coast	West coast	Lake Okeechobee	Total
Transporting:				
Persons engaged—number	7	51		58
Vessels (motor)—do	3	23		26
Tonnage—do	30	388		418
Wholesale trade:				
Establishments—do	87	81	6	174
Persons engaged—do	644	413	27	1,084
Salaries and wages paid—dollars	273,762	311,686	19,294	604,742
Prepared products and by-products industries:				
Establishments—number	5	37		42
Persons engaged—do	219	403		622
Salaries and wages paid—dollars	120,160	298,076		418,236
Products—do	666,599	807,759		1,474,358

LAKE OKEECHOBEE

The first statistical canvass of the fisheries of Lake Okeechobee by the bureau was for the year 1927. During that year these fisheries employed 220 fishermen. Their catch amounted to 4,366,415 pounds of fish, valued at $201,033, which consisted of 2,271,975 pounds of catfish, valued at $104,945; 508,694 pounds of black bass, valued at $44,351; 931,591 pounds of sunfish, valued at $31,103; and 654,155 pounds of crappie, valued at $20,634.

Operating units.—For making the catch the fishermen used 85 motor boats, 177 other boats, 39 haul seines with a combined length of 33,500 yards, 3,825 traps, and 5 lines having 520 hooks or lures.

Catch by gear.—Haul seines accounted for 93 per cent of the catch; traps, 6 per cent; and trot lines, 1 per cent. Over half of the catch of the haul seines was catfish, the remainder being sunfish, crappie,

and black bass. Over half of the catch by traps was sunfish, and the remainder was crappie, black bass, and catfish. The catch by trot lines consisted entirely of catfish.

Catch by counties.—The catch of fish in Lake Okeechobee was made in two counties. Glades County accounted for 2,301,480 pounds, valued at $110,890, and Okeechobee County accounted for 2,064,935 pounds, valued at $90,143.

INDUSTRIES RELATED TO THE FISHERIES

During 1927 no transporting trade was conducted on Lake Okeechobee, nor were any prepared-products or by-products industries located there.

Wholesale trade.—There were six wholesale establishments on the shores of Lake Okeechobee in 1927 handling fresh fishery products. These employed 27 persons, who received $19,294 in salaries and wages. Fish marketed through these establishments usually are sent to points in the Southern States, although a considerable portion of the catfish is shipped to middle-western cities, such as St. Louis, Mo. Shipments are made in boxes and barrels, the preference of middle-western purchasers being for boxes. Before being shipped, most of the catfish are beheaded, eviscerated, and skinned.

Fisheries of Lake Okeechobee, Fla., 1927

OPERATING UNITS

Items	Number
Fishermen	220
Motor boats	85
Other boats	177
Apparatus:	
Haul seines	39
Yards	33,500
Fish traps	3,825
Lines	5
Hooks, snoods, or baits	520

CATCH: BY GEAR

Species	Haul seines		Fish traps		Trot lines		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Black bass	472,865	$41,126	35,829	$3,225			508,694	$44,351
Catfish	2,207,449	102,801	6,750	304	57,776	$1,840	2,271,975	104,945
Crappie	574,993	18,103	79,162	2,531			654,155	20,634
Sunfish	792,944	26,410	138,647	4,693			931,591	31,103
Total	4,048,251	188,440	260,388	10,753	57,776	1,840	4,366,415	201,033

Industries related to the fisheries of Lake Okeechobee

Items		Quantity
Wholesale trade:		
Establishments	number	6
Persons engaged	do	27
Salaries and wages paid	dollars	19,294

SPONGE FISHERY

In the waters along the Gulf coast of Florida is located the only commercial sponge fishery in the United States. During 1927 this fishery employed 768 fishermen, and their catch amounted to 600,229 pounds of sponges, valued at $1,035,134. Virtually the entire catch consisted of the sheepswool variety, although there were small quantities of yellow, grass, velvet, and wire sponges.

Operating units.—For making the catch the fishermen employed 123 motor and 176 row boats, 5 motor and 4 sail vessels with a combined capacity of 116 net tons, 48 diving outfits, and 243 sponge hooks.

Sponge fishery of Florida, 1927

Items	Diving outfits		Sponge hooks		Total	
Fishermen:						
On boats or shore	408		310		718	
On vessels			50		50	
Total	408		360		768	
Boats:						
Motor	48		75		123	
Row			176		176	
Vessels:						
Motor—						
5 to 10 tons			2		2	
11 to 20 tons			1		1	
21 to 30 tons			2		2	
Total			5		5	
Net tonnage			65		65	
Sail—						
5 to 10 tons			1		1	
11 to 20 tons			3		3	
Total			4		4	
Net tonnage			51		51	
Grand total			9		9	
Net tonnage			116		116	
Apparatus	48		243		291	
Sponges:	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Sheepswool	268,744	$776,939	96,170	$184,427	364,914	$961,366
Yellow	60,130	29,865	61,120	19,733	121,250	49,598
Grass	31,452	7,991	70,631	11,364	102,083	19,355
Velvet			175	66	175	66
Wire	10,005	3,832	1,802	917	11,807	4,749
Total	370,331	818,627	229,898	216,507	600,229	1,035,134

Marketing sponges.—The greater portion of the catch landed at Tarpon Springs is marketed through the exchange located there. During 1927, 414,417 pounds of sponges, valued at $865,510, were handled on the exchange. This is 69 per cent of the volume of the entire catch and 84 per cent of the value. Transactions are made on the exchange at auction, and bidders represent merchants in various sections of this and foreign countries.

In 1928 the quantity of sponges sold on the exchange was 413,198 pounds, valued at $729,918. This is a decrease of less than 1 per cent in amount and 16 per cent in value, compared with the amount and value of the transactions for 1927. Of the amount sold in 1928, 232,208 pounds, valued at $623,776, were large wool; 33,744 pounds,

valued at $50,616, were small wool; 61,358 pounds, valued at $28,633, were yellow; 74,698 pounds, valued at $20,925, were grass; and 11,190 pounds, valued at $5,968, were wire.

In April, 1928, the fares of several vessels were shipped direct to wholesalers in the north. Apparently this did not prove successful, for during the remainder of the year the bulk of the fares of the vessels was sold on the exchange. It is estimated that sponges valued at $80,000 were sold outside of the exchange during 1928.

Sponges sold at the exchange, Tarpon Springs, Fla., 1925 to 1928, and the 5-year average 1920–1924

Year	Large wool	Small wool	Yellow	Grass	Wire	Total	
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Value*
1925	242,020	29,968	120,748	28,622	13,314	434,672	$715,097
1926	235,143	26,073	55,205	49,233	2,091	367,745	666,093
1927	252,463	35,413	65,429	50,495	10,617	414,417	865,510
1928	232,208	33,744	61,358	74,698	11,190	413,198	729,918
5-year average, 1920–1924	221,508	61,496	85,524	69,435	9,740	447,705	673,308

FISHERIES OF THE GULF STATES

The latest statistical canvass (prior to that for 1927) of the fisheries and fishery industries of the Gulf States—west coast of Florida, Alabama, Mississippi, Louisiana, and Texas—was that for the calendar year 1923. Complete statistics are published in the report of the division of fishery industries for 1925 and in Statistical Bulletin No. 670.

During 1923 the fisheries and fishery industries of the Gulf States employed 17,793 persons, of whom 11,132 were engaged in fishing operations, 1,785 in the wholesale fishery trade, and 4,876 in the fish-canning and by-products industries. The yield of the fisheries aggregated 160,324,042 pounds, valued at $8,096,650. The products of the canning and by-products industries were valued at $6,264,913.

In the production of marine fishery products the Gulf States rank as one of the most important sections for the production of shrimp and oysters. During 1927 more fishery products were caught in this section than for any year for which there are records since 1880. This was due mainly to greater activity in the shrimp and oyster fisheries. They gave employment to 15,133 fishermen, or 43 per cent more than in 1923, the latest year upon which records are available. Of the total number of fishermen employed in 1927, 2,268 regular fishermen were engaged on vessels and 11,759 regular and 1,106 casual fishermen were employed in the shore and boat fisheries. Their catch amounted to 195,705,355 pounds, valued at $9,965,775. This is an increase of 22 per cent in the catch and 23 per cent in the value of the catch, when compared with the amount of the catch and its value for 1923. Of the total catch in 1927, 84,963,323 pounds, valued at $4,127,137, were fish, and 110,742,032 pounds, valued at $5,838,638, were shellfish and miscellaneous products, including sponges.

Based on the value to the fisherman, shrimp, with a production of 68,876,954 pounds, valued at $2,344,361, was the most important product. Oysters were second, with a production of 36,012,991

pounds of meats, or 5,144,713 bushels, valued at $2,168,648. Other species of importance were mullet, 29,275,275 pounds, valued at $1,198,049; sponges, 600,229 pounds, valued at $1,035,134; red snapper, 11,899,329 pounds, valued at $974,063; squeteagues or "sea trout," 5,829,436 pounds, valued at $580,208; Spanish mackerel, 4,771,866 pounds, valued at $339,377; red drum, 2,872,367 pounds, valued at $237,930; and groupers, 4,723,285 pounds, valued at $148,275.

The industries related to the fisheries of the Gulf States gave employment to 5,651 persons, of whom 136 were engaged in transporting fishery products, 1,644 were in the wholesale trade and received $915,729 in wages, and 3,871 were in the canning and by-products trade and received $1,625,497 in wages. There were 192 establishments in the wholesale fish trade handling primary products and 123 establishments in the prepared-products and by-products trade. The latter manufactured products—mostly canned shrimp and oysters—to the value of $8,107,118. In addition, there were 1,091,443 pounds of fishery products, valued at $83,836, prepared by fishermen of the Gulf States, mostly salt mullet.

Fisheries of the Gulf States, 1927

OPERATING UNITS: By States

Items	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
Fishermen:						
On vessels	817	140	631	520	160	2,268
On boats or shore—						
Regular	4,332	503	1,447	4,338	1,139	11,759
Casual	121	72	213	309	391	1,106
Total	5,270	715	2,291	5,167	1,690	15,133
Vessels:						
Motor	90	31	41	175	40	377
Tonnage	2,739	362	422	1,222	413	5,158
Sail	17		100		5	122
Tonnage	836		1,529		190	2,555
Motor boats	1,765	235	424	1,507	400	4,331
Other boats	2,138	216	704	709	441	4,208
Apparatus:						
Purse seines	2					2
Yards	600					600
Haul seines	122	10	43	438	118	731
Yards	41,774	3,900	13,850	63,526	23,171	146,221
Gill nets	1,814	36			509	2,359
Square yards	1,548,754	15,600			78,861	1,643,215
Trammel nets	315	97	93	116	66	687
Square yards	179,323	41,975	31,939	25,327	26,096	304,660
Pound nets	12					12
Stop nets	241					241
Yards	54,105					54,105
Shrimp trawls	88	150	323	839	239	1,639
Yards at mouth	880	2,055	5,241	10,489	3,437	22,102
Lines	9,299	258	474	506	1,008	11,545
Hooks, snoods, etc	19,011	23,714	49,729	125,580	32,293	250,327
Dip nets	31		175	6,615	200	7,021
Crab pots	1,555					1,555
Dredges	[1] 2		161	36	61	260
Yards at mouth			172	39	63	274
Tongs	410	294	423	990	276	2,393
Rakes and forks	69					69
Sponge apparatus	291					291
Minor apparatus	54	12	154		130	350

[1] Steam dredges.

Fisheries of the Gulf States, 1927—Continued

CATCH OF FISH

Products	Florida (west coast)		Alabama		Mississippi	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Amberfish	11,475	$294				
Angelfish or spadefish	47,870	1,802	3,432	$160	2,250	$90
Barracuda	1,000	20				
Black bass	5,288	585				
Bluefish	620,006	48,862	46,221	3,589	30,350	1,821
Blue runner or hardtail	810,211	19,114	2,258	90	300	15
Bonito	39,571	951				
Buffalofish			10,153	342		
Butterfish	1,583	39			300	10
Cabio or crab-eater	9,000	460			450	25
Catfish	56,652	3,307	84,272	5,353	60,750	2,055
Cero and kingfish or "king mackerel"	1,253,297	80,105				
Cigarfish	310,524	8,796				
Crevalle	96,397	2,737	1,955	59		
Croaker	45,342	1,601	26,986	830	50,950	1,547
Drum, black	69,967	2,081	10,460	466	95,120	3,972
Drum, red, or redfish	776,203	37,360	55,149	4,441	236,916	21,011
Klops or ten-pounder	2,482	74				
Flounders	109,854	6,050	26,680	2,559	92,930	9,388
Groupers	4,487,661	139,088	144,188	5,772	38,185	1,145
Grunts	80,310	3,181	250	9		
Hogfish	29,667	968				
Jewfish	295,159	8,683	200	6	7,500	225
King whiting or "kingfish"	112,824	4,630	4,269	231	2,300	135
Ladyfish	152,335	3,999	23,222	569		
Menhaden	13,466,494	60,394				
Moonfish	500	20				
Mullet	24,801,500	1,041,875	1,972,804	78,443	2,363,146	72,005
Paddlefish or spoonbill cat			5,825	291		
Permit	52,074	1,695				
Pigfish	35,134	1,384	100	3		
Pilotfish	7,474	224				
Pinfish or sailors choice	16,464	616				
Pompano	427,871	84,296	5,367	1,224	6,460	1,111
Porgies	95,651	3,627				
Porkfish	12,146	529				
Sea bass	31,816	2,545			18,900	2,179
Sergeantfish or snook	353,831	11,277				
Sharks	1,200,000	9,000				
Sheepshead	679,754	27,627	46,599	3,180	144,240	11,509
Snapper, mangrove	186,918	7,095				
Snapper, mutton	32,378	2,530				
Snapper, red	9,312,667	740,221	1,058,650	106,128	218,706	19,099
Spanish mackerel	4,570,207	319,203	22,207	1,848	11,695	1,247
Spot	139,278	5,394	32,442	1,031	23,550	714
Squeteagues or "sea trout"	2,583,365	251,223	118,237	11,813	605,430	58,226
Sturgeon	7,669	932	14,997	5,209		
Tang	600	24				
Tripletail	178,672	5,436				
Turbot	1,200	48				
Yellowtail	160,918	6,409				
Total	67,779,259	2,958,411	3,716,923	233,646	4,010,428	207,529

Fisheries of the Gulf States, 1927—Continued

CATCH OF FISH—Continued

Products	Louisiana		Texas		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Amberfish					11,475	$294
Angelfish or spadefish			520	$29	54,072	2,081
Barracuda					1,000	20
Black bass					5,288	585
Bluefish	5,500	$590	560	112	702,637	54,974
Blue runner or hardtail					812,769	19,219
Bonito					39,571	951
Buffalofish			15,000	450	25,153	792
Butterfish					1,883	49
Cabio or crab-eater					9,450	485
Catfish	784,026	38,423	151,670	7,616	1,137,370	56,754
Cero and kingfish or "king mackerel"			10,130	545	1,263,427	80,650
Cigarfish					310,524	8,796
Crevalle					98,352	2,796
Croaker	185,642	7,950	104,098	3,534	413,018	15,462
Drum, black	182,007	6,837	1,432,355	44,141	1,789,909	57,497
Drum, red, or redfish	555,911	57,163	1,248,188	117,955	2,872,367	237,930
Elops or ten-pounder					2,482	74
Flounders	42,905	4,450	77,580	8,290	349,949	30,737
Groupers	16,000	640	37,251	1,630	4,723,285	148,275
Grunts					80,560	3,190
Hogfish					29,667	968
Jewfish			11,175	614	314,034	9,528
King whiting or "kingfish"			18,865	981	138,258	5,977
Ladyfish					175,557	4,568
Menhaden					13,466,494	60,394
Moonfish					500	20
Mullet	132,400	5,464	5,425	262	29,275,275	1,198,049
Paddlefish or spoonbill cat					5,825	291
Permit					52,074	1,695
Pigfish			940	57	36,174	1,444
Pilotfish					7,474	224
Pinfish or sailors choice					16,464	616
Pompano	10,355	1,198	5,420	1,172	455,473	89,001
Porgies					95,651	3,627
Porkfish					12,146	529
Sea bass					50,716	4,724
Seagar	10,000	600			10,000	600
Sergeantfish or snook			116,655	7,014	470,486	18,291
Sharks					1,200,000	9,000
Sheepshead	182,615	18,809	48,033	3,223	1,101,241	64,348
Snapper, mangrove					186,918	7,095
Snapper, mutton					32,378	2,530
Snapper, red	72,000	7,920	1,237,306	100,695	11,899,329	974,063
Spanish mackerel	23,477	2,411	144,280	14,668	4,771,866	339,377
Spot	59,000	2,836			254,270	9,975
Squeteagues or "sea trout"	822,430	85,343	1,699,974	173,603	5,829,436	580,208
Sturgeon					22,666	6,141
Tang					600	24
Tripletail					178,672	5,436
Tuna or horse mackerel			520	26	520	26
Turbot					1,200	48
Yellowtail	6,500	300			167,418	6,709
Total	3,090,768	240,934	6,365,945	486,617	84,963,323	4,127,137

Fisheries of the Gulf States, 1927—Continued

CATCH OF SHELLFISH AND MISCELLANEOUS PRODUCTS

Products	Florida (west coast)		Alabama		Mississippi	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard	12,200	$1,275	31,920	$1,200	2,426,080	$62,090
Crabs, soft					8,400	1,800
Crabs, stone	57,800	9,700				
Sea crawfish or spiny lobster	130,717	10,457				
Shrimp	2,389,474	95,136	5,161,850	154,858	9,234,457	318,583
Clams, hard	954,168	42,415				
Oysters, market, public	1,736,441	166,849	1,072,862	39,698	5,813,738	268,553
Oysters, market, private			91,875	7,476	[1] 13,001,345	398,574
Scallops, sea	12,800	4,800				
Terrapin	3,200	800			8,800	2,200
Turtles	36,702	2,696				
Sponges:						
Grass	102,083	19,355				
Sheepswool	364,914	961,366				
Velvet	175	66				
Wire	11,807	4,749				
Yellow	121,250	49,598				
Conchs	5,200	433				
Mullet roe, fresh	22,400	4,480				
Mullet roe, salted	94,170	18,834				
Sturgeon roe			451	351		
Total	6,055,501	1,393,009	6,358,958	203,583	30,492,820	1,051,800

Products	Louisiana		Texas		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard	1,090,500	$50,868	120,800	$8,540	3,681,500	$123,973
Crabs, soft	136,960	48,179			145,360	49,979
Crabs, stone					57,800	9,700
Sea crawfish or spiny lobster					130,717	10,457
Shrimp	40,259,140	1,406,366	11,832,033	369,418	68,876,954	2,344,361
Clams, hard					954,168	42,415
Oysters, market, public	1,765,050	158,188	2,744,329	187,915	13,132,420	821,203
Oysters, market, private	9,768,801	939,645	18,550	1,750	22,880,571	1,347,445
Scallops, sea					12,800	4,800
Terrapin	76,090	18,267			88,090	21,267
Turtles	21,000	1,050	1,500	60	59,202	3,806
Sponges:						
Grass					102,083	19,355
Sheepswool					364,914	961,366
Velvet					175	66
Wire					11,807	4,749
Yellow					121,250	49,598
Conchs					5,200	433
Mullet roe, fresh					22,400	4,480
Mullet roe, salted					94,170	18,834
Sturgeon roe					451	351
Total	53,117,541	2,622,563	14,717,212	567,683	110,742,032	5,838,638

[1] Includes 12,587,092 pounds (1,798,156 bushels), valued at $374,791, taken from Louisiana beds by Mississippi vessels.

PRODUCTION OF CERTAIN SHELLFISH SHOWN IN NUMBER AND BUSHELS

Products	Florida (west coast)		Alabama		Mississippi	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Crabs, hard—number	36,600	$1,275	95,760	$1,200	7,278,240	$62,090
Crabs, soft—do					25,200	1,800
Crabs, stone—do	77,067	9,700				
Clams, hard—bushels	119,271	42,415				
Oysters, market, public—do	248,063	166,849	153,266	39,698	830,534	268,553
Oysters, market, private—do			13,125	7,476	[1] 1,857,335	398,574
Scallops, sea—do	2,133	4,800				

[1] Includes 1,798 bushels taken from beds in Louisiana by Mississippi vessels.

Fisheries of the Gulf States, 1927—Continued

PRODUCTION OF CERTAIN SHELLFISH—Continued

Products	Louisiana		Texas		Total	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
Crabs, hard ..... number	3,271,500	$50,868	362,400	$8,540	11,044,500	$123,973
Crabs, soft ..... do	410,880	48,179	.....	.....	436,080	49,979
Crabs, stone ..... do	.....	.....	.....	.....	77,067	9,700
Clams, hard ..... bushels	.....	.....	.....	.....	119,271	42,415
Oysters, market, public ..... do	252,150	158,188	392,047	187,915	1,876,060	821,203
Oysters, market, private ..... do	1,395,543	939,645	2,650	1,750	3,268,653	1,347,445
Scallops, sea ..... do	.....	.....	.....	.....	2,133	4,800

Industries related to the fisheries

Items	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
Transporting:						
Persons engaged ..... number	51	20	10	55	.....	136
Vessels—						
Motor ..... do	23	13	1	26	.....	63
Tonnage ..... do	388	112	22	273	.....	795
Sail ..... do	.....	.....	4	1	.....	5
Tonnage ..... do	.....	.....	61	16	.....	77
Wholesale trade:						
Establishments ..... do	81	8	27	32	44	192
Persons engaged ..... do	413	81	365	303	482	1,644
Salaries and wages paid ..... dollars	311,686	40,073	153,007	218,501	192,462	915,729
Prepared products and by-products industries:						
Establishments ..... number	37	7	24	45	10	123
Persons engaged ..... do	403	302	1,097	1,583	486	3,871
Salaries and wages paid ..... dollars	298,076	153,755	457,188	614,535	101,943	1,625,497
Products ..... do	807,759	831,405	2,285,576	3,720,935	461,443	8,107,118

PRODUCTS PREPARED BY FISHERMEN

Items	Florida (west coast)		Mississippi		Louisiana		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Salted:								
Catfish	1,400	$76	.....	.....	.....	.....	1,400	$76
Mullet	757,830	49,971	222,779	$11,139	.....	.....	980,609	61,110
Mullet roe	94,170	18,834	.....	.....	.....	.....	94,170	18,834
Total	853,400	68,881	222,779	11,139	.....	.....	1,076,179	80,020
Dried shrimp	.....	.....	.....	.....	15,264	$3,816	15,264	3,816

WEST COAST OF FLORIDA [7]

The west coast of Florida in 1927 was foremost among the States bordering on the Gulf of Mexico in the importance of its fisheries, employing 35 per cent of the total number of fishermen and accounting for 38 per cent of the total catch. The fisheries and industries related to the fisheries employed 6,137 persons, which is 5 per cent more than the number employed in 1923. Of the total, 5,270 were fishermen, 51 were employed on transporting vessels, 413 in the wholesale trade, and 403 in the prepared-products and by-products industries.

[7] See pp. 515–524 for complete statistics for Florida.

The catch amounted to 73,834,760 pounds, valued at $4,351,420. This is an increase of 1 per cent in amount and 8 per cent in the value of the catch, compared with the catch and its value in 1923. Of the total value of the catch, that for mullet accounted for 24 per cent, sponges 24 per cent, red snapper 17 per cent, Spanish mackerel 7 per cent, squeteagues or "sea trout" 6 per cent, and oysters 4 per cent. Of the total production, that of mullet accounted for 34 per cent, menhaden 18 per cent, red snapper 13 per cent, Spanish mackerel 6 per cent, groupers 6 per cent, and squeteagues or "sea trout" 3 per cent.

Operating units.—The catch of fishery products along the west coast of Florida during 1927 was taken by 5,270 fishermen, who used 3,903 motor and row boats, 90 motor vessels, 17 sailing vessels, and 17 types of gear. The motor and sailing vessels had a combined net tonnage of 3,575.

Fisheries of the west coast of Florida, 1927

OPERATING UNITS: BY GEAR

Items	Purse seines	Haul seines	Gill nets	Pound nets	Trammel nets	Stop nets	Lines	Dip nets	Shrimp trawls
Fishermen:									
On boats or shore—									
Regular		615	1,954	27	432	100	1,047	62	168
Casual		40					59		
On vessels	60		6				690		8
Total	60	655	1,960	27	432	100	1,796	62	176
Boats:									
Motor		128	893	9	146	23	623	31	84
Other		131	1,521	15	312	55	110	31	
Vessels:									
Motor									
5 to 10 tons			2				12		4
11 to 20 tons							25		
21 to 30 tons							6		
31 to 40 tons	1						4		
41 to 50 tons							7		
51 to 60 tons							6		
61 to 70 tons	1						12		
71 to 80 tons							2		
91 to 100 tons							1		
101 to 110 tons							1		
Total	2		2				76		4
Net tonnage	96		17				2,529		26
Sail—									
5 to 10 tons							1		
11 to 20 tons							1		
31 to 40 tons							3		
51 to 60 tons							3		
61 to 70 tons							3		
131 to 140 tons							1		
141 to 150 tons							1		
Total							13		
Net tonnage							785		
Grand total	2		2				89		4
Net tonnage	96		17				3,314		26
Apparatus:									
Number	2	122	1,814	12	315	241	9,299	31	88
Length, yards	600	41,774				54,105			
Square yards			1,548,754		179,323				
Yards at mouth									880
Hooks, snoods, or baits							19 011		

Fisheries of the west coast of Florida, 1927—Continued

OPERATING UNITS: By gear—Continued

Items	Dredges	Tongs	Rakes and forks	Crab pots	Sponge apparatus	Cast nets, spears, and crawfish hooks	By hand	Total, exclusive of duplication
Fishermen:								
On boats or shore—								
Regular	20	382	69	25	718	58	36	4,332
Casual		18				4		121
On vessels		10			50			817
Total	20	410	69	25	768	62	36	5,270
Boats:								
Motor	2	156	13	8	123	16	12	1,765
Other	4	95	69	16	176	20	25	2,138
Vessels:								
Motor—								
5 to 10 tons		5			2			21
11 to 20 tons					1			26
21 to 30 tons					2			8
31 to 40 tons								5
41 to 50 tons								7
51 to 60 tons								6
61 to 70 tons								13
71 to 80 tons								2
91 to 100 tons								1
101 to 110 tons								1
Total		5			5			90
Net tonnage		31			65			2,739
Sail—								
5 to 10 tons					1			2
11 to 20 tons					3			4
31 to 40 tons								3
51 to 60 tons								3
61 to 70 tons								3
131 to 140 tons								1
141 to 150 tons								1
Total					4			17
Net tonnage					51			836
Grand total		5			9			107
Net tonnage		31			116			3,575
Apparatus:								
Number	2	410	69	1,555	291	54		

Catch by gear.—Four types of gear caught 83 per cent of the fish taken in the marine fisheries of the west coast of Florida during 1927. Listed in order of importance they were gill nets, which accounted for 32 per cent of the catch; lines, 23 per cent; purse seines, 18 per cent; and haul seines, 10 per cent.

The catch by gill nets was made up largely of mullet, Spanish mackerel, sharks, and squeteagues or "sea trout"; that of lines consisted largely of red snapper, groupers, cero and kingfish, and squeteagues or "sea trout"; that of purse seines was made up entirely of menhaden; and that of haul seines consisted mainly of mullet, Spanish mackerel, squeteagues or "sea trout," blue runner, cigarfish, and bluefish.

Fisheries of the west coast of Florida, 1927

CATCH: BY GEAR

Species	Haul and purse seines		Gill nets		Pound nets		Trammel nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Angelfish or spadefish	11,993	$420	27,175	$1,045	3,537	$159	735	$33
Black bass			2,788	335				
Bluefish	282,719	15,015	278,537	26,274	29,796	4,469	23,395	2,443
Blue runner or hardtail	320,080	8,010	196,169	5,017	263,016	5,340	21,616	558
Bonito	12,096	316			23,025	461		
Butterfish	1,583	39						
Catfish							2,800	76
Cero and kingfish or "king mackerel"	8,360	418	5,300	340	39,748	5,642		
Cigarfish	310,524	8,796						
Cobia or crab eater	900	36			5,000	300		
Crevalle	36,738	838	47,517	1,504	852	38		
Croaker	13,634	474	19,426	644			9,350	394
Drum, black	14,189	547	26,082	853	2,100	42	11,450	306
Drum, red, or redfish	71,794	3,007	209,527	10,290	3,100	217	155,572	9,216
Elops or ten-pounder	2,482	74						
Flounders	28,187	1,366	22,729	1,023	1,200	72	18,079	1,068
Groupers	1,804	54			900	36		
Grunts	2,260	82	8,923	405				
Hogfish	2,894	99	11,269	359				
Jewfish	2,434	49			800	16		
King whiting or "kingfish"	38,018	1,565	41,734	1,460			5,450	255
Ladyfish	108,584	3,033	18,928	457	14,948	299	9,875	210
Menhaden	[1] 13,407,771	58,654	58,723	1,740				
Mullet	4,659,448	183,549	16,104,673	695,874	17,504	788	3,492,225	140,558
Mullet roe, fresh			22,400	4,480				
Mullet roe, salted	45,270	9,054					48,900	9,780
Permit	9,399	321	31,089	1,007	490	22		
Pigfish	4,155	153	20,312	776	500	23	8,200	373
Pilotfish	850	25	5,148	155				
Pinfish or sailors choice	1,637	58	10,185	382	460	21		
Pompano	69,242	13,961	173,507	33,853	19,149	4,787	132,605	25,021
Porkfish	2,520	99	5,826	265			1,300	65
Sergeantfish or snook	86,464	2,838	203,164	6,513				
Sharks			1,200,000	9,000				
Sheepshead	83,727	3,452	256,534	10,546	11,915	536	90,320	4,298
Snapper, mangrove	17,784	609	107,503	3,768	1,288	58	7,762	359
Snapper, red	1,552	124						
Spanish mackerel	866,628	68,611	3,416,200	227,694	60,562	7,873	49,070	4,381
Spot	19,418	697	72,822	2,722	18,500	843	20,698	896
Squeteagues or "sea trout"	360,364	33,310	891,443	90,404	50,535	6,014	300,166	31,927
Sturgeon			7,669	932				
Tripletail	24,086	774	118,696	3,578			400	20
Yellowtail	14,365	431	85,693	3,001				
Turtles	8,202	416	28,500	2,280				
Total	[1] 20,954,155	421,374	23,736,191	1,148,976	568,925	38,056	4,409,968	232,237

Species	Stop nets		Lines		Dip nets		Shrimp trawls	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Amberfish			11,475	$294				
Angelfish or spadefish	3,180	$95	1,250	50				
Barracuda			1,000	20				
Black bass			2,500	250				
Bluefish	815	92	4,744	569				
Blue runner or hardtail	9,330	189						
Bonito			4,450	174				
Catfish			53,852	3,231				
Cero and kingfish or "king mackerel"			1,199,889	73,705				
Cobia or crab eater			3,100	124				
Crevalle	9,490	285	1,800	72				
Croaker	2,932	89						
Drum, black	4,893	98	11,253	235				
Drum, red, or redfish	14,237	443	321,973	14,187				
Flounders	6,746	202	10,395	367			3,718	$298
Groupers	5,100	154	4,479,857	138,844				
Grunts	1,173	35	67,954	2,659				
Hogfish	1,422	43	14,082	467				
Jewfish	9,972	200	281,953	8,418				
King whiting or "kingfish"	27,622	1,350						
Moonfish			500	20				
Mullet	519,650	20,786						

[1] Of this amount, 13,275,800 pounds of menhaden, valued at $54,776, was taken by purse seines.

Fisheries of the west coast of Florida, 1927—Continued

CATCH BY GEAR—Continued

Species	Stop nets		Lines		Dip-nets		Shrimp trawls	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Permit	9,846	295	$1,250	$50				
Pigfish	1,967	59						
Pilotfish	1,476	44						
Pinfish or sailors' choice	1,182	35	3,000	120				
Pompano	30,870	6,174	2,498	500				
Porgies			95,651	3,627				
Porkfish			2,500	100				
Sea bass			31,816	2,545				
Sergeantfish or snook	64,203	1,926						
Sheepshead	53,943	1,632	183,315	7,163				
Snapper, mangrove	29,085	880	23,496	1,421				
Snapper, mutton			32,378	2,530				
Snapper, red			9,311,115	740,097				
Spanish mackerel	20,667	1,341	157,080	9,303				
Spot	7,840	236						
Squeteagues or "sea trout"	128,026	10,691	852,831	78,877				
Tang			600	24				
Tripletail	35,490	1,064						
Turbot			1,200	48				
Yellow tail	15,860	477	45,000	2,500				
Crabs, hard			5,000	375				
Crabs, stone					1,000	$100		
Sea crawfish or spiny lobster					106,151	8,492		
Shrimp							2,389,474	95,136
Total	1,017,017	48,915	17,220,757	1,092,966	107,151	8,592	2,393,192	95,434

Species	Dredges		Tongs		Rakes and forks		Crab pots	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard							7,200	$900
Crabs, stone							55,800	9,500
Clams, hard	715,256	$26,822			194,272	$12,209		
Oysters, market, public			1,698,641	$160,099	37,800	6,750		
Total	715,256	26,822	1,698,641	160,099	232,072	18,959	63,000	10,400

Species	Sponge apparatus		Cast nets, spears, and crawfish hooks		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders			18,800	$1,654		
Mullet			8,000	320		
Crabs, stone			1,000	100		
Sea crawfish or spiny lobster			24,566	1,965		
Clams, hard					44,640	$3,384
Scallops, sea					12,800	4,800
Conchs					5,200	433
Terrapin					3,200	800
Sponges, grass	102,083	$19,355				
Sponges, sheepswool	364,914	961,366				
Sponges, velvet	175	66				
Sponges, wire	11,807	4,749				
Sponges, yellow	121,250	49,598				
Total	600,229	1,035,134	52,366	4,039	65,840	9,417

Fisheries by counties.—Fishing was prosecuted in the marine waters of 23 counties on the west coast of Florida in 1927. Ranked according to value, the fisheries of Pinellas County were most important, accounting for 9 per cent of the total catch and 29 per cent of the total value. Escambia County was next in value of catch, accounting for 10 per cent of the total and 11 per cent of the total value. Bay, Franklin, Charlotte, and Monroe Counties followed in the order named, although the catch and its value in each county differed but little from each of the others in this group.

Fisheries of the west coast of Florida, 1927

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Bay	512		24	659	124	52	6,831,669	$394,073
Charlotte	505				325	353	6,523,912	325,163
Citrus	157				58	157	2,279,611	125,172
Collier	132				50	102	1,986,908	89,383
Dixie	24	10			8	34	469,820	24,226
Escambia	538	15	40	2,155	52	30	7,076,518	465,148
Franklin	562		13	120	163	159	6,744,548	386,633
Gulf	83		2	96	15	13	13,527,600	66,912
Hernando	3					3	54,750	2,903
Hillsborough	157	4	4	60	64	89	1,666,230	75,803
Jefferson	10	20			2	30	337,960	16,543
Lee	121				91	78	1,272,290	59,268
Levy	140	10			67	123	3,480,420	214,732
Manatee	136	4			55	104	2,619,228	129,101
Monroe	548		9	194	238	217	4,711,874	318,240
Okaloosa	125				26	22	1,525,322	92,201
Pasco	28				6	25	334,752	17,749
Pinellas	919		15	291	201	211	6,506,628	1,255,236
Santa Rosa	41				11	13	181,285	11,371
Sarasota	241				164	142	1,667,519	97,839
Taylor	39	10			15	49	782,380	43,211
Wakulla	114	48			22	120	3,147,413	135,451
Walton	14				3	7	106,123	5,062
Total	5,149	121	107	3,575	1,760	2,133	73,834,760	4,351,420

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—There were 51 persons in 1927 engaged on the west coast of Florida primarily in transporting the catch from the fishing grounds to market. In this trade 23 registered motor vessels were in operation, with a total net tonnage of 388. The size of vessel in most popular use ranged from 11 to 20 net tons.

Wholesale trade.—There were 81 wholesale establishments along the west coast of Florida engaged chiefly in handling fresh and frozen fishery products. This is 42 per cent of the total number of such establishments in the Gulf section. Virtually the entire catch of fishery products taken along the west coast of Florida consisted of market fish, which accounts for the large percentage of wholesale fish establishments there. These establishments employed 413 persons, who received $311,686 in salaries and wages. Pinellas County had 24 wholesale establishments. Other counties of importance were Franklin with 10 and Monroe with 9 establishments.

Prepared and by-products trade.—There were 37 establishments along the west coast of Florida in 1927 engaged in canning and curing fishery products and in the manufacture of fishery by-products. This is 30 per cent of the total number in the Gulf section. They employed 403 persons, who received $298,076 in salaries and wages. The products manufactured were valued at $807,759. Detailed statistics of most of the items manufactured may be obtained from "Fishery Industries of the United States, 1927," Bureau of Fisheries Document No. 1050.

In addition to the above, 853,400 pounds of fish, valued at $68,881, were salted by fishermen. This consisted mostly of salted mullet.

Industries related to the fisheries of the west coast of Florida, 1927

TRANSPORTING

Items	Number
Men on transporting vessels	51
Transporting vessels (motor):	
5 to 10 tons	5
11 to 20 tons	13
21 to 30 tons	2
31 to 40 tons	3
Total	23
Net tonnage	388

WHOLESALE FISHERY TRADE

Items	Bay	Charlotte and Sarasota	Citrus	Escambia and Santa Rosa	Franklin	Hillsborough and Pasco
Establishments	4	5	5	6	10	6
Persons engaged:						
Proprietors or managers	5	6	5	7	11	8
Salaried employees	7	8	3	26	18	----
Wage earners	7	39	10	13	45	6
Paid to salaried employees	$10,872	$14,507	$3,120	$43,477	$10,929	----
Paid to wage earners	6,488	35,936	9,988	11,412	19,053	$4,524

Items	Lee and Collier	Levy	Manatee	Monroe	Pinellas	Total
Establishments	4	3	5	9	24	81
Persons engaged:						
Proprietors or managers	4	3	5	10	28	92
Salaried employees	3	1	----	6	5	77
Wage earners	8	6	6	27	77	244
Paid to salaried employees	$5,700	$300	----	$9,300	$14,550	$112,755
Paid to wage earners	8,611	3,480	$5,004	23,256	71,179	198,931

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Items	Amount
Establishments	37	Salaries paid	$117,802
Persons engaged:		Wages paid	180,274
Proprietors or managers	57		
Salaried employees	97	Total salaries and wages paid	298,076
Wage earners	249		

Products	Quantity	Value	Products	Quantity	Value
Salted:			Canned shrimp:		
Mullet, pounds	811,951	$61,928	Dry pack, standard cases [1]	1,008	$6,233
Other species, do	33,880	2,156	Wet pack, do	28,591	218,808
Mullet roe, do	113,683	35,290	Miscellaneous products [2]	----	483,344
			Total	----	807,759

[1] A standard case contains 4 dozen 5-ounce cans in the dry pack or 4 dozen 5¾-ounce cans in the wet pack.

[2] Includes smoked mullet, shark products, oyster-shell products, menhaden products, canned oysters, canned clam products, and canned turtle products.

Industries related to the fisheries of the west coast of Florida, 1927—Continued

PRODUCTS PREPARED BY THE FISHERMEN

Salted fish	Pounds	Value
Catfish	1,400	$76
Mullet	757,830	49,971
Mullet roe	94,170	18,834
Total	853,400	68,881

ALABAMA

The fisheries and related fishery industries of Alabama employed 1,118 persons, which is 8 per cent less than the number employed in 1923. Of the total, 715 were fishermen, 20 were employed on transporting vessels, 81 in the wholesale trade, and 302 in the prepared-products and by-products industries.

The catch amounted to 10,075,881 pounds, valued at $437,229. This is an increase of 32 per cent in amount and 28 per cent in value compared with the catch and its value for 1923. Of the total value of the catch, shrimp accounted for 35 per cent, red snapper 24 per cent, mullet 18 per cent, and oysters 11 per cent. Of the total production, shrimp accounted for 51 per cent, mullet 20 per cent, oysters 12 per cent, and red snapper 11 per cent.

Operating units.—The catch of fishery products in Alabama during 1927 was taken by 715 fishermen, who used 451 motor and row boats, 31 motor vessels with a net tonnage of 362, and 7 types of gear.

Fisheries of Alabama, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Gill nets	Trammel nets	Lines	Shrimp trawls	Spears	Tongs	Total, exclusive of duplication
Fishermen:								
On boats or shore:								
Regular	46	12	128		257	6	273	503
Casual		11		24		6		72
On vessels	4		13	90	37		11	140
Total	50	23	141	114	294	12	284	715
Boats:								
Motor	9	10	51	19	131	6	130	235
Other	7	3	90	71		12	122	216
Vessels (motor):								
5 to 10 tons	1		1	2	16		5	20
11 to 20 tons			2	6	2			9
31 to 40 tons				1				1
61 to 70 tons				1				1
Total	1		3	10	18		5	31
Net tonnage	8		30	193	142		35	362
Apparatus:								
Number	10	36	97	258	150	12	294	
Length, yards	3,900							
Square yards		15,600	41,975					
Yards at mouth					2,055			
Hooks, snoods, or baits				23,714				

Catch by gear.—Four types of gear caught 91 per cent of the catch of marine fishery products in Alabama during 1927. Listed in order of importance, they are shrimp trawls, which accounted for 51 per cent of the catch; trammel nets, 16 per cent; lines, 13 per cent; and tongs, 11 per cent. The catch by shrimp trawls was made up entirely of shrimp, that of trammel nets consisted almost entirely of mullet, lines took chiefly red snapper, and tongs took mostly oysters.

Fisheries of Alabama, 1927

CATCH: BY GEAR

Species	Haul seines		Gill nets		Trammel nets		Lines	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Angelfish or spadefish	1,562	$85			1,870	$75		
Bluefish	31,421	2,721	10,000	$600	4,800	268		
Blue runner or hardtail	2,258	90						
Buffalofish					10,153	342		
Catfish	1,066	84			16,096	611	67,110	$4,658
Crevalle	1,955	59						
Croakers	428	13			26,558	817		
Drum, black	1,217	51			9,243	415		
Drum, red, or redfish	22,597	1,503			29,112	2,594	3,440	344
Flounders	7,600	758			4,080	401		
Groupers							144,188	5,772
Grunts					250	9		
Jewfish							200	6
King whiting or "kingfish"	2,126	110			2,143	121		
Ladyfish	22,762	555			460	14		
Mullet	526,085	21,662	80,000	2,800	1,366,719	53,981		
Paddlefish or spoonbill cat							5,825	291
Pigfish	100	3						
Pompano	3,725	856			1,642	368		
Sheepshead	24,017	1,682			21,332	1,423	1,250	75
Snapper, red							1,058,650	106,128
Spanish mackerel	11,842	1,011	10,000	800	365	37		
Spot	21,750	703			10,692	328		
Squeteagues or "sea trout"	32,045	3,289	6,500	590	69,932	6,958	9,760	976
Sturgeon			7,429	2,600	7,568	2,609		
Sturgeon roe			200	160	251	191		
Crabs, hard							31,920	1,200
Shrimp	48,000	1,449						
Total	762,556	36,675	114,129	7,550	1,583,266	71,562	1,322,343	119,450

Species	Shrimp trawls		Spears		Tongs	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders			15,000	$1,400		
Shrimp	5,113,850	$153,418				
Oysters, market, public					1,024,037	$32,723
Oysters, market, private					91,875	7,476
Total	5,113,850	153,418	15,000	1,400	1,115,912	40,199

Fisheries by counties.—Fishing was prosecuted in the marine waters of Mobile and Baldwin Counties in Alabama during 1927. The former county was by far the most important, accounting for virtually the entire catch.

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Baldwin	85	33	7	59	55	89	1,479,673	$69,790
Mobile	418	39	24	303	180	127	8,596,208	367,439
Total	503	72	31	362	235	216	10,075,881	437,229

Transporting trade.—In 1927 there were 20 persons engaged in transporting the catch of fishery products in Alabama. In this trade 13 motor vessels were in operation, having a net tonnage of 112. Virtually all of these were 5 to 10 net tons in size.

Wholesale trade.—There were eight wholesale establishments in Alabama in 1927 engaged chiefly in handling fresh and frozen fishery products. These employed 81 persons, who received $40,073 in salaries and wages.

Prepared and by-products trade.—Seven establishments were engaged in canning and curing fishery products and in the manufacture of fishery by-products. These employed 302 persons, who received $153,755 in salaries and wages. The products (mostly canned oysters and shrimp) were valued at $831,405. Detailed statistics of most of these items may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

Industries related to the fisheries of Alabama, 1927

TRANSPORTING

Items	Number
Men on transporting vessels	20
Transporting vessels (motor):	
5 to 10 tons	11
11 to 20 tons	2
Total	13
Net tonnage	112

WHOLESALE FISHERY TRADE

Items	Number
Establishments	8
Persons engaged:	
Proprietors or managers	12
Salaried employees	18
Wage earners	51
Paid to salaried employees	$18,954
Paid to wage earners	$21,119

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Products	Quantity	Value
Establishments	7	Canned:		
Persons engaged:		Oysters, standard cases [1]	23,032	$119,052
Proprietors or managers	19	Shrimp:		
Salaried employees	16	Dry pack, do.	81,040	489,822
Wage earners	267	Wet pack, do.	28,411	167,294
Salaries paid	$34,540	Oyster shell products: Poultry feed, tons	5,938	49,480
Wages paid	$119,215	Other products [2]		5,757
Total salaries and wages paid	$153,755	Total		831,405

[1] A standard case contains 4 dozen 5-ounce cans in the dry pack or 4 dozen 5¾-ounce cans in the wet pack of shrimp, or 4 dozen 5-ounce cans of oysters.
[2] Includes lime and salted mullet.

MISSISSIPPI

The fisheries and related fishery industries of Mississippi employed 3,763 persons in 1927, which is 8 per cent more than the number employed in 1923. Of the total, 2,291 were fishermen, 10 were employed on transporting vessels, 365 in the wholesale trade, and 1,097 in the prepared-products and by-products industries.

The catch amounted to 34,503,248 pounds, valued at $1,259,329. This is 18 per cent of the total production of the Gulf fisheries, and is an increase of 38 per cent in amount and 28 per cent in value compared with the catch and its value for 1923. Of the total value of the catch, oysters accounted for 53 per cent, shrimp 25 per cent, mullet 6 per cent, and crabs 5 per cent. Of the total production, oysters accounted for 55 per cent, shrimp 27 per cent, crabs 7 per cent, and mullet 7 per cent.

Operating units.—The catch of fishery products in Mississippi during 1927 was taken by 2,291 fishermen, who used 1,123 motor and row boats, 41 motor vessels, 100 sailing vessels, and 9 types of gear. The motor and sailing vessels had a combined net tonnage of 1,951.

Fisheries of Mississippi, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Trammel nets	Lines	Cast nets	Dip nets	Shrimp trawls
Fishermen:						
On boats or shore—						
Regular	164	114	275	5		530
Casual			2	63	5	
On vessels	84	4	14			222
Total	248	118	291	68	5	752
Boats:						
Motor	31	44	45			265
Other	31	84	198	31	4	
Vessels:						
Motor—						
5 to 10 tons	2	1	1			18
11 to 20 tons	2		1			11
21 to 30 tons						1
Total	4	1	2			30
Net tonnage	48	10	23			314
Sail—						
5 to 10 tons	2					9
11 to 20 tons	6					16
21 to 30 tons						2
31 to 40 tons						1
Total	8					28
Net tonnage	112					394
Grand total	12	1	2			58
Net tonnage	160	10	23			708
Accessory motor boats	1					
Accessory rowboats		4				
Apparatus:						
Number	43	93	474	37	175	323
Length, yards	13,850					
Square yards		31,939				
Yards at mouth						5,241
Hooks, snoods, or baits			49,729			

Fisheries of Mississippi, 1927—Continued

OPERATING UNITS: By gear—Continued

Items	Dredges	Tongs	Spears	By hand	Total, exclusive of duplication
Fishermen:					
On boats or shore—					
Regular	163	603	8	10	1,447
Casual			109	75	213
On vessels	568				631
Total	731	603	117	85	2,291
Boats:					
Motor	22	54			423
Other	20	504			700
Vessels:					
Motor—					
5 to 10 tons	15				26
11 to 20 tons	9				14
21 to 30 tons	1				1
Total	25				41
Net tonnage	262				422
Sail—					
5 to 10 tons	18				20
11 to 20 tons	68				71
21 to 30 tons	7				7
31 to 40 tons	1				1
41 to 50 tons	1				1
Total	95				100
Net tonnage	1,464				1,529
Grand total	120				141
Net tonnage	1,726				1,951
Accessory motor boats					1
Accessory rowboats					4
Apparatus:					
Number	161	423	117		
Yards at mouth	517				

Catch by gear.—Four types of gear caught 87 per cent of the catch of the marine fishery products taken in Mississippi during 1927. Listed in order of importance they are dredges, which accounted for 44 per cent of the catch; shrimp trawls, 23 per cent; tongs, 11 per cent; and lines, 9 per cent. The catch by dredges was made up entirely of oysters; that of shrimp trawls, entirely of shrimp; that of tongs, almost entirely of oysters; and that of lines consisted mainly of hard crabs, with large quantities of squeteagues and red snapper.

Fisheries of Mississippi, 1927

CATCH: BY GEAR

Species	Haul seines		Trammél nets		Lines		Cast nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Angelfish or spadefish			2,250	$90				
Bluefish	12,300	$738	18,050	1,083				
Blue runner or hardtail			300	15				
Butterfish			300	10				
Cabio			450	25				
Catfish	9,600	388	39,000	1,251	12,150	$416		
Croakers	6,250	184	15,300	481	29,400	882		
Drum, black	21,920	1,235	47,250	1,850	25,950	887		
Drum, red, or redfish	36,466	2,477	149,950	13,228	39,300	4,186	11,200	$1,120
Flounders	10,480	1,048	20,350	2,110	9,300	950	11,800	1,180
Groupers					38,185	1,145		
Jewfish					7,500	225		
King whiting or "kingfish"	2,300	135						
Mullet	1,032,496	28,816	1,292,250	41,887			38,400	1,302
Pompano	3,160	474	2,550	471	750	166		
Sea bass	500	50	6,300	737	12,100	1,392		
Sheepshead	34,490	2,099	70,350	5,370	22,000	2,198	17,400	1,842
Snapper, red					218,706	19,099		
Spanish mackerel	5,970	597	3,825	410	1,900	240		
Spot			4,550	144	19,000	570		
Squeteagues	37,700	3,820	308,630	32,337	249,100	20,961	10,000	1,108
Crabs, hard					2,411,680	61,370		
Shrimp	1,195,930	38,356						
Terrapin	1,600	400						
Total	2,411,162	80,817	1,981,655	101,499	3,097,021	114,687	88,800	6,552

Species	Dip nets		Shrimp trawls		Dredges	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard	14,400	$720				
Shrimp			8,038,527	$280,227		
Oysters, market:						
Public, Mississippi					2,536,450	$97,073
Private, Louisiana					12,587,092	374,791
Total	14,400	720	8,038,527	280,227	15,123,542	471,864

Species	Tongs		Spears		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders			41,000	$4,100		
Crabs, soft					8,400	$1,800
Terrapin	3,600	$900			3,600	900
Oysters, market:						
Public, Mississippi	3,277,288	171,480				
Private, Mississippi	414,253	23,783				
Total	3,695,141	196,163	41,000	4,100	12,000	2,700

Fisheries by counties.—Fishing was prosecuted in the marine waters of Harrison, Jackson, and Hancock Counties in Mississippi during 1927. The first was by far the most important, accounting for virtually the entire catch.

Fisheries of Mississippi, 1927

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Hancock	67	15			17	43	608,000	$30,626
Harrison	1,736	168	137	1,912	340	510	29,185,197	1,054,405
Jackson	275	30	4	39	66	147	4,710,051	174,298
Total	2,078	213	141	1,951	423	700	34,503,248	1,259,329

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—In 1927 there were 10 persons engaged in transporting the catch of fishery products in Mississippi. In this trade one motor vessel and four sail vessels were in operation. These vessels had a combined net tonnage of 83.

Wholesale trade.—There were 27 wholesale establishments in Mississippi during 1927 engaged chiefly in handling fresh and frozen fishery products. Of the total, 20 were located in Harrison County and 7 in Jackson and Hancock Counties. These establishments employed 365 persons, who received $153,007 in salaries and wages.

Prepared and by-products trade.—There were 24 establishments in Mississippi during 1927 engaged in canning and curing fishery products and in the manufacture of fishery by-products. These employed 1,097 persons, who received $457,188 in salaries and wages. The products, which were principally canned shrimp and oysters and oyster-shell products, were valued at $2,285,576. This is 28 per cent of the total production of prepared fishery products and by-products manufactured in the Gulf States, thereby making the State second in importance among these States in this trade. Detailed statistics of most of the items manufactured may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

In addition to the above, 222,779 pounds of salted mullet, valued at $11,139, were prepared by fishermen.

Industries related to the fisheries of Mississippi, 1927

TRANSPORTING

Items	Number
Men on transporting vessels	10
Transporting vessels:	
Motor	1
Net tonnage	22
Sail—	
5 to 10 tons	2
11 to 20 tons	1
31 to 40 tons	1
Total	4
Net tonnage	61
Grand total	5
Net tonnage	83

Industries related to the fisheries of Mississippi, 1927—Continued

WHOLESALE FISHERY TRADE

Items	Harrison	Jackson and Hancock	Total
Establishments	20	7	27
Persons engaged:			
Proprietors or managers	23	8	31
Salaried employees	24	5	29
Wage earners	216	89	305
Paid to salaried employees	$19,431	$5,930	$25,361
Paid to wage earners	$91,214	$36,432	$127,646

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Items	Amount
Establishments	24	Salaries paid	$82,780
Persons engaged:		Wages paid	374,408
Proprietors or managers	44		
Salaried employees	68	Total salaries and wages paid	457,188
Wage earners	985		

Products [1]	Quantity	Value	Products [1]	Quantity	Value
Canned:			Oyster shell products:		
Oysters, standard cases [2]	229,800	$1,217,538	Poultry feed, tons	22,686	201,254
Shrimp—			Lime, do	1,475	1,554
Dry pack, do	55,225	336,782	Other products [3]		14,301
Wet pack, do	87,246	514,147			
			Total		2,285,576

[1] In addition to the products shown here, 222,779 pounds of mullet, valued at $11,139, were salted by the fishermen.

[2] A standard case contains 4 dozen 5-ounce cans of oysters, 4 dozen 5-ounce cans in the dry pack, or 4 dozen 5¾-ounce cans in the wet pack of shrimp.

[3] Includes shrimp bran and salted mullet.

LOUISIANA

During 1927 the fisheries of Louisiana were second in importance among the States prosecuting fishing in the Gulf of Mexico. Its fisheries and related fishery industries employed 7,108 persons, which is 49 per cent greater than the number employed in 1923 and 47 per cent of the total persons employed in the Gulf fisheries in 1927. Of the total, 5,167 were fishermen, 55 were employed on transporting vessels, 303 in the wholesale trade, and 1,583 in the prepared-products and by-products industries.

The catch amounted to 56,208,309 pounds, valued at $2,863,497. This is 29 per cent of the total production of the Gulf fisheries in 1927 and is an increase of 61 per cent in amount and 46 per cent in value compared with the catch and its value for 1923. Of the total value of the catch, shrimp accounted for 49 per cent, oysters 38 per cent, crabs 3 per cent, and squeteagues or "sea trout" 3 per cent. Of the total production shrimp accounted for 72 per cent, oysters 21 per cent, crabs 2 per cent, and squeteagues or "sea trout" 1 per cent.

Operating units.—The catch of fishery products in Louisiana during 1927 was taken by 5,167 fishermen, who used 2,216 motor and row boats, 175 motor vessels with a net tonnage of 1,222, and 7 types of gear.

Fisheries of Louisiana, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Trammel nets	Lines	Dip nets	Shrimp trawls	Dredges	Tongs	Total, exclusive of duplication
Fishermen:								
On boats or shore—								
Regular	1,907	230	361	144	1,494	19	633	4,338
Casual	132	6	69	10	6		88	309
On vessels	8	2			198	123	284	520
Total	2,047	238	430	154	1,698	142	1,005	5,167
Boats:								
Motor	262	113	232	10	750	3	254	1,507
Other	352	4	121	134		3	171	709
Vessels (motor):								
5 to 10 tons	1				83	21	86	160
11 to 20 tons		1			6	9	5	15
Total	1	1			89	30	91	175
Net tonnage	6	14			586	285	612	1,222
Apparatus:								
Number	438	116	506	6,615	839	36	990	
Length, yards	63,526							
Square yards		25,327						
Yards at mouth					10,489	39		
Hooks, snoods, or baits			125,580					

Catch by gear.—Three types of gear caught 91 per cent of the catch of marine fishery products in Louisiana during 1927. Listed in order of importance they are shrimp trawls, which accounted for 59 per cent of the catch; haul seines, 16 per cent; and tongs, 16 per cent.

The catch of shrimp trawls was made up almost entirely of shrimp; that of haul seines, almost entirely shrimp with lesser quantities of squeteagues or "sea trout," catfish, redfish or drum, and black drum; and that of tongs entirely of oysters.

Fisheries of Louisiana, 1927

CATCH: BY GEAR

Species	Haul seines		Trammel nets		Lines		Dip nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bluefish			5,500	$590				
Catfish	545,556	$26,568	228,270	11,141	10,200	$714		
Croaker	91,290	3,966	94,352	3,984				
Drum, black	103,052	3,991	78,955	2,846				
Drum, red, or redfish	381,158	39,126	174,753	18,037				
Flounders	34,158	3,538	8,747	912				
Groupers					16,000	640		
Mullet	78,950	3,258	53,450	2,206				
Pompano	5,192	592	5,163	606				
Sea gar	10,000	600						
Sheepshead	99,308	10,275	83,307	8,534				
Snapper, red					72,000	7,920		
Spanish mackerel	14,992	1,524	8,485	887				
Spot	39,700	1,992	19,300	844				
Squeteagues or "sea trout"	569,543	58,764	252,887	26,579				
Yellowtail	4,500	220	2,000	80				
Crabs, hard	5,000	675			996,100	41,513	89,400	$8,680
Crabs, soft							136,960	48,179
Shrimp	7,111,684	249,257						
Terrapin	76,090	18,267						
Total	9,170,173	422,613	1,015,169	77,246	1,094,300	50,787	226,360	56,859

Fisheries of Louisiana, 1927—Continued

CATCH; BY GEAR—Continued

Species	Shrimp trawls		Dredges		Tongs	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Shrimp	33, 147, 456	$1, 157, 109				
Turtles	21,000	1,050				
Oysters, market, public			414, 750	$38, 588	1, 350, 300	$119, 600
Oysters, market, private			2, 265, 928	217, 806	7, 502, 873	721, 839
Total	33, 168, 456	1, 158, 159	2, 680, 678	256, 394	8, 853, 173	841, 439

Fisheries by parishes.—Fishing was prosecuted in the marine waters of 15 parishes of Louisiana in 1927. From the standpoint of the value of the catch, La Fourche Parish was most important, accounting for 21 per cent of the catch and 20 per cent of the value. Terrebonne Parish followed closely, accounting for 20 per cent of the catch and 20 per cent of the value. Orleans Parish was third, accounting for 16 per cent of the catch and 17 per cent of the value. Other parishes whose fisheries were important were Jefferson, Plaquemines and St. Bernard.

Fisheries of Louisiana, 1927

OPERATING UNITS AND CATCH: BY PARISHES

Parish	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Ascension	8				3		67, 200	$67, 200
Calcasieu		2			2		4, 200	294
Cameron	6	15			3	6	67, 160	5, 756
Iberia	26	6	1	14	12	5	212, 900	15, 479
Jeff Davis	2	10			1	10	24, 650	1, 928
Jefferson	986	40	6	45	274	111	10, 179, 055	386, 722
Lafayette	5		1	15			21, 000	1, 800
La Fourche	816	20	55	360	270	48	11, 939, 658	579, 280
Orleans	716		17	140	182	95	8, 946, 057	499, 952
Plaquemines	660		25	168	171	84	6, 459, 668	364, 952
St. Bernard	530				188	126	4, 069, 782	226, 161
St. Mary	163	20	14	119	60	42	2, 460, 641	157, 897
St. Tammany	76		2	22	9	37	214, 700	40, 145
Terrebonne	860	144	54	339	312	137	11, 376, 746	568, 187
Vermilion	4	52			22	6	164, 892	7, 744
Total	4, 858	309	175	1, 222	1, 507	709	56, 208, 309	2, 863, 497

INDUSTRIES RELATED TO THE FISHERIES

Transporting trade.—During 1927 there were 55 persons engaged in transporting the catch of fishery products in Louisiana. In this trade 26 motor and 1 sail vessel were in operation. These vessels had a net tonnage of 289. Motor vessels with a net tonnage of 5 to 10 were in most general use.

Wholesale trade.—There were 32 wholesale establishments in Louisiana during 1927 engaged chiefly in handling fresh and frozen fishery products. Sixteen of these were in Orleans Parish, in which the city of New Orleans is situated. There were 303 persons employed in all the wholesale establishments in Louisiana, who received $218,501 in salaries and wages.

Prepared and by-products trade.—There were 45 establishments in Louisiana during 1927 engaged in canning and curing fishery products and in the manufacture of fishery by-products. These employed 1,583 persons, who received $614,535 in salaries and wages. The

products, which were principally canned shrimp and oysters and oyster-shell products, were valued at $3,720,935. This is 46 per cent of the total production of prepared fishery products and by-products in the Gulf States, thereby making Louisiana first in importance among these States in this trade. Detailed statistics of most of the items manufactured may be obtained from "Fishery Industries of the United States, 1927," Bureau of Fisheries Document No. 1050.

In addition to the above, 15,264 pounds of dried shrimp, valued at $3,816, were prepared by fishermen.

Industries related to the fisheries of Louisiana, 1927

TRANSPORTING

Items	Number
Men on transporting vessels	55
Transporting vessels:	
Motor—	
5 to 10 tons	18
11 to 20 tons	6
21 to 30 tons	1
41 to 50 tons	1
Total	26
Net tonnage	273
Sail	1
Net tonnage	16
Grand total	27
Net tonnage	289

WHOLESALE FISHERY TRADE

Items	Jefferson and St. Bernard	Orleans	St. Mary and Iberia	Terrebonne	Total
Establishments	5	16	3	8	32
Persons engaged:					
Proprietors or managers	5	33	7	9	54
Salaried employees	6	48	4	20	78
Wage earners	5	93	17	56	171
Paid to salaried employees	$6,130	$49,744	$3,959	$20,992	$80,825
Paid to wage earners	$4,536	$90,862	$11,172	$31,106	$137,676

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Items	Amount
Establishments	45	Salaries paid	$128,026
Persons engaged:		Wages paid	486,509
Proprietors or managers	56		
Salaried employees	100	Total salaries and wages paid	614,535
Wage earners	1,427		

Products [1]	Quantity	Value	Products [1]	Quantity	Value
Canned:			Oyster-shell products—Con.		
Oysters, standard cases [2]	27,047	$136,052	Lime, tons	2,067	$5,175
Shrimp—			Shrimp bran, do	1,368	42,976
Dry pack, do	147,280	903,722	Dried shrimp, do	653	327,948
Wet pack, do	211,336	1,222,937			
Oyster-shell products:			Total		3,720,935
Poultry feed, tons	123,183	1,082,125			

[1] In addition to these products, 15,264 pounds of shrimp, valued at $3,816, were dried by the fishermen.
[2] A standard case contains 4 dozen 5-ounce cans of oysters, 4 dozen 5-ounce cans in the dry pack, or 4 dozen 5¾-ounce cans in the wet pack of shrimp.

NOTE.—One of the above firms also handles fresh and frozen fishery products.

TEXAS

The fisheries and related fishery industries of Texas during 1927 employed 2,658 persons, which is 27 per cent greater than the number employed in 1923 and is 18 per cent of the total persons in the Gulf fisheries in 1927. Of the total, 1,690 were fishermen, 482 were employed in the wholesale trade, and 486 in the prepared-products and by-products industries.

The catch amounted to 21,083,157 pounds, valued at $1,054,300. This is 11 per cent of the total production of the Gulf fisheries in 1927 and is an increase of 8 per cent in amount and 35 per cent in value compared with the catch and its value for 1923. Of the total value of the catch, shrimp accounted for 35 per cent, oysters 18 per cent, squeteagues or "sea trout" 16 per cent, redfish or red drum 11 per cent, and red snapper 10 per cent. Of the total production, shrimp accounted for 56 per cent, oysters 13 per cent, squeteagues or "sea trout" 8 per cent, and black drum 7 per cent.

Operating units.—During 1927 the catch of fishery products in Texas was taken by 1,690 fishermen, 841 motor and row boats, 40 motor vessels, 5 sail vessels, and 9 types of gear. The motor and sail vessels had a combined net tonnage of 603.

Fisheries of Texas, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Gill nets	Trammel nets	Lines	Dip nets
Fishermen:					
On boats or shore—	*Number*	*Number*	*Number*	*Number*	*Number*
Regular	448	120	102	80	32
Casual	151	33	24	158	6
On vessels	10		4	89	
Total	609	153	130	327	38
Boats:					
Motor	50	57	62	82	
Other	238	69	30	152	28
Vessels:					
Motor—					
5 to 10 tons	2		1	3	
11 to 20 tons				4	
41 to 50 tons				2	
Total	2		1	9	
Net tonnage	10		7	178	
Sail—					
5 to 10 tons			1		
31 to 40 tons				1	
51 to 60 tons				1	
71 to 80 tons				1	
Total			1	3	
Net tonnage			6	178	
Grand total	2		2	12	
Net tonnage	10		13	356	
Apparatus:					
Number	118	509	66	1,008	200
Length, yards	23,171				
Square yards		78,861	26,096		
Hooks, snoods, or baits				32,293	

Fisheries of Texas, 1927—Continued

OPERATING UNITS: By gear—Continued

Items	Shrimp trawls	Dredges	Tongs	Spears	By hand	Total, exclusive of duplication
Fishermen:						
On boats or shore—	*Number*	*Number*	*Number*	*Number*	*Number*	*Number*
Regular	428	99	288	77	6	1,139
Casual		15	30	53		391
On vessels	60	14	10			160
Total	488	128	328	130	6	1,690
Boats:						
Motor	211	46	66	23		400
Other			178	38		441
Vessels:						
Motor—						
5 to 10 tons	23	6	3			29
11 to 20 tons	5	1	1			9
41 to 50 tons						2
Total	28	7	4			40
Net tonnage	225	61	31			413
Sail—						
5 to 10 tons			1			2
31 to 40 tons						1
51 to 60 tons						1
71 to 80 tons						1
Total			1			5
Net tonnage			6			190
Grand total	28	7	5			45
Net tonnage	225	61	37			603
Apparatus:						
Number	239	61	276	130		
Yards at mouth	3,437	63				

Catch by gear.—Three types of gear caught 79 per cent of the catch of marine fishery products in Texas during 1927. Listed in order of importance they are shrimp trawls, which accounted for 56 per cent of the catch; haul seines, 14 per cent; and lines, 9 per cent.

The catch by shrimp trawls consisted almost entirely of shrimp; that of haul seines, mainly of black drum, squeteagues or "sea trout," and redfish or red drum; and that of lines, mainly of red snapper, with lesser quantities of squeteagues, Spanish mackerel, and redfish or red drum.

Fisheries of Texas, 1927

CATCH: BY GEAR

Species	Haul seines		Gill nets		Trammel nets		Lines	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Angelfish or spadefish	520	$29						
Bluefish	235	47					325	$65
Buffalofish	15,000	450						
Catfish	35,590	1,463	19,975	$845	68,745	$4,041	27,360	1,267
Croaker	83,483	2,668	6,245	251	9,210	430	5,160	185
Drum, black	1,182,798	35,957	161,332	5,165	61,990	1,977	26,235	1,042
Drum, red, or redfish	631,571	52,835	223,117	20,857	302,900	35,064	90,600	9,199
Flounders	6,150	605	340	58	1,550	243	2,590	279
Groupers							37,251	1,630
Jewfish							11,175	614
Kingfish or "king mackerel"							10,130	545
King whiting or "kingfish"	12,365	602	795	46	1,700	92	4,005	241
Mullet	3,100	140	400	22	1,925	100		
Pigfish			90	5	850	52		
Pompano	2,875	574	600	148	735	147	1,210	303
Red snapper							1,237,306	100,695
Sergeantfish or snook	90,625	5,452	17,980	1,079	7,500	450	550	33
Sheepshead	23,383	1,105	4,390	315	15,165	1,477	5,095	326
Spanish mackerel	1,730	328					142,550	14,340
Squeteagues or "sea trout"	818,204	73,274	293,120	30,169	421,120	53,223	167,530	16,937
Tuna or horse mackerel	520	26						
Crabs, hard							36,800	3,140
Shrimp	76,500	2,000						
Total	2,984,649	177,555	728,384	58,960	893,390	97,296	1,805,872	150,841

Species	Dip nets		Shrimp trawls		Dredges	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs, hard	55,200	$3,600	28,800	$1,800		
Shrimp			11,755,533	367,418		
Turtles			1,500	60		
Oysters, market, public					1,451,394	$101,502
Oysters, market, private					8,400	660
Total	55,200	3,600	11,785,833	369,278	1,459,794	102,162

Species	Tongs		Spears		By hand	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders			66,950	$7,105		
Oysters, market, public	1,284,535	$86,013			8,400	$400
Oysters, market, private	10,150	1,090				
Total	1,294,685	87,103	66,950	7,105	8,400	400

Fisheries by counties.—Fishing was prosecuted in the marine waters of 13 counties of Texas during 1927. From the standpoint of value of catch Galveston County was most important, accounting for 34 per cent of the catch and 34 per cent of the value. Neuces County follows, accounting for 22 per cent of the total catch and 20 per cent of the total value. Calhoun County was third with 14 per cent of the catch and 14 per cent of the value. Other counties of importance were Aransas, San Patricio, and Matagorda.

Fisheries of Texas, 1927

OPERATING UNITS AND CATCH: BY COUNTIES

County	Fishermen		Vessels		Motor boats	Other boats	Products	
	Regular	Casual						
	Number	*Number*	*Number*	*Net tonnage*	*Number*	*Number*	*Pounds*	*Value*
Aransas	68		1	7	21	43	1,523,365	$90,429
Brazoria	8	10			4	14	42,568	3,342
Calhoun	162	33	12	92	68	49	2,994,613	147,436
Cameron	110					94	1,258,419	59,698
Chambers	4	5			2	3	28,850	2,512
Galveston	403	255	17	383	145	29	7,178,801	359,774
Harris	18	21	1	11	5	17	144,572	10,003
Jefferson	3	18	1	8		2	59,275	7,922
Matagorda	121	16	5	42	37	48	1,067,814	75,157
Nueces	325	30	5	40	80	115	4,604,517	208,998
Orange		3				3	6,000	360
Refugio	9				3	6	19,395	1,820
San Patricio	68		3	20	35	18	2,154,968	86,849
Total	1,299	391	45	603	400	441	21,083,157	1,054,300

INDUSTRIES RELATED TO THE FISHERIES

Wholesale trade.—During 1927 there were 44 wholesale establishments in Texas engaged chiefly in handling fresh and frozen fishery products. Eleven of these were in Galveston County, where the city of Galveston is situated. There were 482 persons employed in all the wholesale establishments, who received $192,462 in salaries and wages.

Prepared and by-products trade.—Ten establishments were engaged in canning and curing fishery products and in the manufacture of fishery by-products. These employed 486 persons, who received $101,943 in salaries and wages. The products, which were mainly canned oysters and shrimp, were valued at $461,443. Detailed statistics of most of these items may be obtained from Fishery Industries of the United States, 1927, Bureau of Fisheries Document No. 1050.

Industries related to the fisheries of Texas, 1927

WHOLESALE FISHERY TRADE

Items	Aransas	Calhoun	Cameron	Galveston	Harris, Jefferson, and Orange	Matagorda and Brazoria	Nueces	San Patricio	Total
Establishments	3	8	4	11	4	7	4	3	44
Persons engaged:									
Proprietors or managers	3	15	7	20	4	9	7	8	73
Salaried employees	5	15	11	22	2	13	12	4	84
Wage earners	21	73	6	111	6	77	20	11	325
Paid to salaried employees	$4,740	$11,762	$7,440	$36,425	$2,860	$11,133	$8,011	$2,640	$85,011
Paid to wage earners	$3,950	$26,408	$4,000	$41,668	$4,850	$20,413	$4,062	$2,100	$107,451

Industries related to the fisheries of Texas, 1927—Continued

PREPARED FISHERY PRODUCTS AND BY-PRODUCTS

Items	Number	Products	Quantity	Value
Establishments	10			
Persons engaged:				
Proprietors or managers	22	Canned shrimp:		
Salaried employees	22	Dry pack, standard cases [1]	12,257	$72,742
Wage earners	442	Wet pack, do	49,872	328,826
Salaries paid	$29,030	Poultry feed from crushed oyster shells, tons	4,026	34,215
Wages paid	$72,913	Other products [2]		25,660
Total salaries and wages paid	$101,943	Total		461,443

[1] A standard case contains 4 dozen 5-ounce cans in the dry pack or 4 dozen 5¾-ounce cans in the wet pack of shrimp.

[2] Includes canned oysters and lime from crushed oyster shells.

HISTORICAL REVIEW

Eleven general surveys have been made for statistics of the fisheries of the Gulf States during the 48 years from 1880 to 1927. These have not been as frequent as might be desired, but a rather clear statistical picture of the trend of the fisheries in this district is obtainable from the records, which are published in comparable form herewith. Those years for which statistical surveys have been made are used as a basis for the following discussions of the trend of individual species. It should be borne in mind, however, that in certain of those years when surveys were not made there may have been unusual fluctuations. In some of the surveys prior to 1889 the fisheries of certain States were not canvassed, and in certain of the States that were canvassed several of the species were included with "miscellaneous fish" or "all other species." For this reason totals are not usually shown prior to 1889.

Total catch.—The most recent records for the Gulf States, which are for the year 1927, show a larger catch than in any year during the period 1880 to 1927. With the exception of a slight decline in 1897, the increase has been continuous from a catch of 23,561,000 pounds in 1880 to a catch of 195,705,000 pounds in 1927.

Bluefish.—The catch of bluefish amounted to 549,000 pounds in 1889. In the following years the catch fluctuated from 265,000 pounds to 611,000 pounds until 1927, when 703,000 pounds were taken, which was a new peak for this species.

Cero and kingfish.—Due to the similarity of these species they have been combined in the accompanying statistics. The first available statistics for these species are for 1889, when 456,000 pounds were taken. A sharp decline began in 1902, and in 1908 the catch amounted to only 37,000 pounds. In more recent years the production has increased steadily, and in 1927 the catch amounted to 1,263,000 pounds, which is more than twice that in any other year for which there are records.

Crevalle.—The first available record of the catch of crevalle was for the year 1889, when 281,000 pounds were taken. The catch varied in subsequent years from 46,000 to 561,000 pounds until 1927, when 911,000 pounds were taken, this being the largest production of any year on record.

Croaker.—Statistics of the catch of croaker are not available prior to 1889. In that year 491,000 pounds were taken. The peak of the production was reached in 1908, when there was a catch of 776,000 pounds. Since 1908 the production has consistently decreased. The lowest production on record appeared in 1927, when the catch amounted to 368,000 pounds.

Drum, black.—Beginning with a production of 126,000 pounds in 1889, the first year for which statistics are available, the catch remained fairly constant until 1902, when there was a considerable increase. The largest production on record was made in 1918, when 2,010,000 pounds were taken. This was nearly five times the production of the largest preceding year's catch. The catch in 1927 amounted to 1,789,000 pounds.

Drum, red, or redfish.—The production of this species has remained comparatively constant through the period 1889 to 1927. These years mark the limits of available statistics. In 1889 the catch amounted to 2,019,000 pounds, and in 1927 it amounted to 2,872,000 pounds. The largest catch was made in 1923, when 3,133,000 pounds were taken.

Groupers.—Following a production of 446,000 pounds in 1889, this fishery decreased, and in 1890 the low mark of 428,000 pounds was reached. Following this depressed period the production climbed to 5,936,000 pounds in 1918, which is the largest production for any year for which there is a record. A catch of 4,723,000 pounds was made in 1927.

Menhaden.—Statistics for this species, which is used almost exclusively for reduction to oil and fish scrap, are available only since 1902. In that year 2,000 pounds were taken. In 1918 the catch amounted to 14,413,000 pounds, the increased production being due to the establishment of reduction plants on the Gulf coast. The peak of this fishery was reached in 1923 when 19,473,000 pound were taken. A nominal reduction was noted in 1927, when the catch amounted to 13,466,000 pounds.

Mullet.—Beginning with a catch of 2,218,000 pounds in 1880, this fishery made rapid strides in the following few years, in 1889 amounting to 15,048,000 pounds. Another large increase was effected in 1902, when 28,582,000 pounds were taken. In 1908 there was a considerable decrease in the catch, but in 1918 a catch that was in excess of that of 1902 was made. The catch in 1923, which amounted to 31,022,000 pounds, was the largest on record. There was a slight decrease in 1927, when 29,275,000 pounds were taken.

Pompano.—In 1889 the catch of pompano amounted to 483,000 pounds and remained over 400,000 pounds until 1908. The largest catch on record was made in 1902, when 487,000 pounds were taken. From 1908 to 1923 the catch fluctuated between 200,000 pounds and 300,000 pounds. A recovery was effected in 1927, when the catch amounted to 454,000 pounds.

Sheepshead.—A downward trend is noted in this fishery since 1889, when the first complete catch records were obtained. In that year the catch amounted to 1,819,000 pounds. The largest production, 2,075,000 pounds, was made in 1902. The catch in 1927 amounted to 1,102,000 pounds, which is the smallest catch of any year on record.

Red snapper.—Starting with a catch of 3,792,000 pounds in 1889, there was a continuous increase, according to available records, until 1902, when the largest catch on record was made, amounting to 13,608,000 pounds. In the intervening years until 1927 comparatively small fluctuations were noticeable. In the latter year the production amounted to 11,900,000 pounds.

Spanish mackerel.—The first available records are for the year 1889, when a smaller catch than that of any succeeding year was registered. It amounted to 635,000 pounds. Increases have been virtually continuous, the catch in 1927 amounting to 4,771,000 pounds, which has been unprecedented.

Squeteagues or "sea trout."—No records prior to 1889 are available. In that year the production amounted to 2,983,000 pounds. Since that time there has been a consistent upward trend, and the production in 1927, which amounted to 5,828,000 pounds, was the largest that has yet been reported in the Gulf district.

Sturgeon.—The Gulf States comprise primarily a salt-water fishing district, and the catch of fresh-water species, such as sturgeon, is small. In 1897, which is the first year for which statistics are available, the catch amounted to 9,000 pounds. In 1902 there occurred an exceptional increase, 349,000 pounds being taken. In 1908 the production fell to 7,000 pounds and remained practically constant until 1927, when 23,000 pounds were taken, which is the largest production of any year with the exception of 1902.

Crabs.—In the years from 1889 to and including 1908 the production of crabs fluctuated between 1,200,000 pounds and 1,800,000 pounds. Catches of between 800,000 pounds and 1,000,000 pounds were made in the years 1918 to 1923. By far the largest catch on record was registered in 1927, when 3,884,000 pounds were taken.

Shrimp.—As the most important single fishery, the catch of shrimp has consistently increased during the past 31 years from a production of 6,792,000 pounds in 1897 to 68,876,000 pounds in 1927. During the eight years prior to 1897 the catch had remained comparatively constant.

Sea crawfish or spiny lobster.—The first available statistics for sea crawfish are for 1897, when 158,000 pounds were taken. Only about one-third of this quantity was taken in 1902 and 1908. In 1918 the production amounted to 322,000 pounds, which is the largest catch recorded. In 1927 the production had declined to 131,000 pounds.

Oysters.—The oyster fishery of the Gulf States is second in importance only to that for shrimp. Starting with a production of 19,425,000 pounds in 1889, there was an upward trend until 1908, when the production amounted to 44,403,000 pounds. In the years following, until 1918, the trend was downward. In 1923 a slight recovery was made, and in 1927 the production had climbed to 36,013,000 pounds.

Sponges.—Beginning with a production of 207,000 pounds in 1880, when the first records are available, the tendency of the production of sponges has been upward, reaching the highest point on record in 1927, when 600,000 pounds were produced.

Considered in general terms, the catches of bluefish, cero and kingfish, crevalle, black drum, groupers, menhaden, mullet, red snapper, Spanish mackerel, squeteagues or "sea trout," crabs, shrimps, oysters, and sponges have increased in size, while those of croaker, red drum,

pompano, sheepshead, sturgeon, and sea crawfish have remained fairly constant. The catch of no species appears to have shown a definite downward trend.

Fisheries of the Gulf States, 1880 to 1927

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted]

Year	Florida (west coast)		Alabama		Mississippi	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
1880	8,376	$565	3,542	$119	788	$23
1887	(1)	(1)	(1)	(1)	6,548	190
1888	19,597	802	1,634	76	7,883	232
1889	23,597	949	4,560	147	8,933	251
1890	27,419	1,064	4,777	155	8,131	246
1897	28,255	945	4,699	134	7,830	192
1902	48,120	1,462	9,351	267	23,427	553
1908	37,566	2,120	10,665	387	17,302	459
1918	54,754	3,420	5,609	231	20,592	763
1923	73,266	4,026	7,631	342	25,032	986
1927	73,835	4,351	10,076	437	34,503	1,259

Year	Louisiana		Texas		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
1880	6,996	$393	3,859	$128	23,561	$1,228
1887	18,455	580	6,282	256	(1)	(1)
1888	19,121	613	6,609	271	54,844	1,994
1889	20,947	621	7,358	297	65,395	2,265
1890	20,789	660	7,959	314	69,075	2,439
1897	17,402	714	7,175	287	65,361	2,272
1902	24,754	858	8,044	354	113,696	3,494
1908	42,302	1,448	10,439	446	118,274	4,860
1918	24,954	1,419	25,015	677	130,924	6,510
1923	34,835	1,961	19,560	782	160,324	8,097
1927	56,208	2,863	21,083	1,054	195,705	9,964

CATCH OF CERTAIN SPECIES: BY STATES

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Bluefish						Cero and kingfish or "king mackerel"		
	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)	Texas	Total
1880	44								
1887	(1)	(1)	73	13	7		(1)		
1888	(1)		78	15	6		(1)		
1889	364	58	90	13	24	549	456		456
1890	420	56	96	13	26	611	292		292
1897	265					265	440		440
1902	353					353	152		152
1908	580					580	37		37
1918	271					271	466		466
1923	418					418	564		564
1927	620	46	30	6	1	703	1,253	10	1,263

[1] Figures not available.

Fisheries of the Gulf States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Crevalle [2]				Croaker					
	Florida (west coast)	Alabama	Texas	Total	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1887	(1)	(1)	63		(1)	(1)	[3] 75	[3] 54	107	
1888	(1)		60		(1)		[3] 79	[3] 55	110	
1889	185	44	52	281	36	103	54	150	148	491
1890	333	41	56	430	43	98	57	158	176	532
1897	46			46		(1)	(1)	(1)	(1)	
1902	85			85		58	273	155	58	544
1908	227			227		72	176	369	159	776
1918	561			561		94	41	383	198	716
1923	508			508		37	45	219	68	369
1927	907	4		911	45	27	51	186	104	368

Year	Drum, black						Drum, red, or redfish					
	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1887	(1)	(1)	2				(1)	(1)	141	289	1,005	
1888	(1)		2				(1)		165	288	944	
1889	102	7	2	11	4	126	393	64	185	314	1,063	2,019
1890	122	7	3	18	4	154	458	54	201	339	1,108	2,160
1897	38	6	5	19	50	118	236	213	199	465	1,144	2,257
1902	194	5	12	51	157	419	1,104	70	93	442	898	2,607
1908							[4] 608	[4] 151	[4] 244	[4] 716	[4] 1,309	3,028
1918	57	12	14	54	1,873	2,010	958	23	116	566	1,337	3,000
1923	95	9	39	60	1,028	1,231	1,398	15	177	665	878	3,133
1927	70	10	95	182	1,432	1,789	776	55	237	556	1,248	2,872

Year	Grouper						Menhaden		
	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)	Texas	Total
1880	1,764								
1887	(1)	(1)			4		(1)		
1888	(1)				7		(1)		
1889	418	10		18		446			
1890	399	11		18		428			
1897	781	69			3	853			
1902	437	635			40	1,112	2		2
1908	1,231	394				1,625			
1918	5,626	244	25	20	21	5,936	295	14,118	14,413
1923	4,266	305	26	10	33	4,640	10,956	8,517	19,473
1927	4,488	144	38	16	37	4,723	13,466		13,466

[1] Figures not available.
[2] Includes blue runner or jurel.
[3] Includes spots.
[4] Probably includes some black drum.

NOTE.—Prior to 1889 some of the above species were included under the heading "Miscellaneous fish" or "All other species"; therefore, the total for certain species is not shown for certain years of this period.

Fisheries of the Gulf States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Mullet						Pompano					
	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1880	2,028	125	2	55	8	2,218	14					
1887	(1)	(1)	233	253	31		(1)	(1)	11	30	2	
1888	(1)	262	233	253	32		(1)		12	31	2	
1889	13,348	613	722	283	82	15,048	420	18	14	29	2	483
1890	15,556	588	305	288	83	16,820	342	17	15	32	2	408
1897	15,575	600	241	166		16,582	406					406
1902	26,310	1,546	603	123		28,582	487					487
1908	16,145	1,656	1,035	133		18,969	232					232
1918	26,380	1,703	1,565	325		29,973	242					242
1923	28,454	648	1,739	181		31,022	282					282
1927	24,802	1,973	2,363	132	5	29,275	428	5	6	10	5	454

Year	Sheepshead						Snapper, red					
	Florida (west) coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1880							223	360		900		
1887	(1)	(1)	124	362	695		(1)	(1)		131	75	
1888	(1)		128	366	647		(1)	86		150	65	
1889	527	33	156	364	739	1,819	3,469	51		250	22	3,792
1890	544	35	173	391	779	1,922	4,173	62		240	5	4,480
1897	663	87	110	238	468	1,566	5,314	335			465	6,114
1902	1,374	75	70	339	217	2,075	8,074	3,466			2,068	13,608
1908	473	24	81	249	298	1,125	7,659	2,635			2,252	12,546
1918	989	28	68	277	198	1,560	7,230	798	98	60	1,243	9,429
1923	1,025	21	91	193	141	1,471	9,471	970	104	175	1,009	11,729
1927	680	47	144	183	48	1,102	9,313	1,059	219	72	1,237	11,900

Year	Spanish mackerel						Squeteagues or "sea trout"					
	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1887	(1)	(1)	30	119	11		(1)	(1)	258	524	941	
1888	(1)		34	126	11		(1)	228	280	522	872	
1889	382	58	44	134	17	635	712	205	370	619	1,077	2,983
1890	448	44	46	144	25	707	654	209	372	656	1,120	3,011
1897	503	86	65	56	41	751	830	296	453	567	1,012	3,158
1902	1,513	34	7	6	64	1,624	1,913	259	473	1,078	1,119	4,842
1908	1,419	13	7	5	42	1,446	1,207	208	517	1,103	1,055	4,090
1918	3,463	4	12	2	41	3,522	1,694	139	356	1,190	1,613	4,992
1923	3,772	1	10	3	79	3,795	1,591	49	410	783	1,524	4,357
1927	4,570	22	12	23	144	4,771	2,583	118	605	822	1,700	5,828

Year	Sturgeon			Crabs					
	Florida (west coast)	Alabama	Total	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1880							288	36	
1887	(1)	(1)		(1)	(1)	53	971	111	
1888	(1)			(1)	96	57	994	115	
1889						67	989	189	1,245
1890						47	981	191	1,219
1897	9		9	6	24	153	1,459	138	1,780
1902	349		349	13	75	265	1,312	43	1,708
1908	7		7	64	246	427	322	200	1,259
1918	5		5	24	96	225	282	194	821
1923	7		7	7	84	443	316	109	959
1927	8	15	23	70	32	2,434	1,227	121	3,884

[1] Figures not available.

Fisheries of the Gulf States, 1880 to 1927—Continued

CATCH OF CERTAIN SPECIES: BY STATES—Continued

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Shrimp					
	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total
1880				534	638	
1887		(1)	1,145	6,810	255	
1888	(1)	44	1,093	6,943	259	
1889		30	794	7,238	242	8,304
1890			614	6,662	176	7,452
1897		41	1,903	4,487	361	6,792
1902	17		4,424	7,635	291	12,350
1908	8	37	4,121	8,581	118	12,865
1918	3,250	1,266	9,147	18,520	164	32,347
1923	2,881	3,182	9,879	27,753	3,422	47,117
1927	2,389	5,162	9,234	40,259	11,832	68,876

Year	Sea crawfish or spiny lobster	Oysters [2]						Sponges
	Florida (west coast)	Florida (west coast)	Alabama	Mississippi	Louisiana	Texas	Total	Florida (west coast)
1880		410	732	175	2,065	669		207
1887	(1)	(1)	(1)	4,068	4,748	1,793		(1)
1888	(1)	(1)	533	5,370	5,040	2,389		254
1889		2,064	3,069	5,919	5,849	2,524	19,425	317
1890		2,598	3,367	5,645	5,891	3,086	20,587	367
1897	158	1,258	1,785	4,408	6,714	2,491	16,656	333
1902	56	4,057	2,432	16,836	8,389	2,402	34,116	347
1908	53	3,764	4,132	7,473	25,554	3,480	44,403	545
1911		1,312	3,093	4,604	31,530	3,043	43,582	(1)
1918	322	2,616	1,032	8,907	7,855	3,344	23,754	452
1923	321	1,642	2,262	11,875	7,155	2,520	25,454	575
1927	131	1,736	1,165	18,815	11,534	2,763	36,013	600

[1] Figures not available.

[2] Shown on the basis of 7 pounds of meat to the bushel.

FISHERIES OF THE PACIFIC COAST STATES

Surveys of the fisheries of the Pacific Coast States—Washington, Oregon, and California—have been made annually, beginning with the calendar year 1922. The survey for 1922 included statistics of fishing gear employed and statistics of the wholesale and prepared-products industries. Since 1922 these items have been omitted, except that statistics of the commodities prepared in the canned fishery products and by-products industries have been obtained for all years since 1922, and fishing gear is included for 1927. The statistics for 1926, as well as a summary of all statistics for this section from 1888, are published in the report of the division of fishery industries for 1927, and the 1926 statistics alone, and in condensed form in Statistical Bulletin No. 820.

There were 18,597 fishermen in the Pacific Coast States in 1926. The catch of the fishery products in that year amounted to 521,286,418 pounds, valued at $18,914,733.

The fisheries of the Pacific Coast States are especially important for the production of salmon, tuna and tunalike fishes, pilchard or sardine, and halibut. The catch in 1927 was larger than in any other year for which there is a record. The fisheries in these States gave

employment to 20,514 fishermen in 1927, or 10 per cent more than in 1926. Of the total number, 4,897 were on vessels and 15,617 in the shore and boat fisheries. Their catch amounted to 651,196,982 pounds, valued at $22,306,576. This is an increase of 25 per cent in quantity and 18 per cent in value when compared with the catch and value for the year 1926. Of the total catch in 1927, there were 627,511,658 pounds of fish, valued at $20,341,430, 18,519,394 pounds of shellfish, etc., valued at $1,638,171, and 5,165,930 pounds of whale products, valued at $326,975.

Based on the value to the fishermen, salmon, with a production of 131,792,907 pounds, valued at $9,691,887, was by far the most important of the fishery products in the Pacific Coast States. Pilchard or sardine ranked second with a production of 342,275,289 pounds, valued at $1,826,785. Other important species, the catch of which exceeded $500,000 in value, were halibut, 11,654,831 pounds, valued at $1,557,267; yellowfin tuna, 25,933,966 pounds, valued at $1,304,002; skipjack or striped tuna 33,807,011 pounds, valued at $1,260,847; barracuda 6,199,739 pounds, valued at $595,997; and albacore, 4,579,367 pounds, valued at $517,354.

Fisheries of the Pacific Coast States, 1927

OPERATING UNITS: BY STATES

Item	Washington				Oregon		
	Puget Sound district	Coastal district	Columbia River district	Total	Columbia River district	Coastal district	Total
Fishermen:							
On vessels	2,219	10		2,229	62	12	74
On boats and shore	2,154	2,582	1,944	6,680	3,230	1,268	4,498
Total	4,373	2,592	1,944	8,909	3,292	1,280	4,572
Vessels:							
Steam	2			2			
Net tonnage	16			16			
Motor	319	5		324	21	6	27
Net tonnage	6,080	46		6,126	194	49	243
Sail	3			3			
Net tonnage	1,055			1,055			
Total vessels	324	5		329	21	6	27
Total net tonnage	7,151	46		7,197	194	49	243
Boats:							
Motor	1,127	290	1,113	2,530	1,404	842	2,246
Other	283	178	35	496	37	166	203
Apparatus:							
Troll lines	1,932		544	2,476	752	233	985
Hooks	7,728		2,176	9,904	3,008	932	3,940
Trawl, set, and hand lines	27,458		57	27,515	282	108	390
Hooks	1,386,146		5,700	1,391,846	16,200	5,400	21,600
Purse seines—							
Salmon	176			176			
Yards	52,800			52,800			
Haul seines	134		49	183	49		49
Yards	11,970		16,596	28,566	28,667		28,667
Drift gill nets, salmon	396	107	559	1,062	1,042	374	1,416
Square yards	463,300	128,880	1,159,500	1,751,680	2,856,000	561,000	3,417,000
Set gill nets, salmon	18	300	314	632	240	963	1,203
Square yards	3,600	60,000	62,800	126,400	48,000	192,600	240,600
Beam trawls	31			31			
Yards at mouth	207			207			
Drag bag nets	88	1		89			
Yards	7,157	100		7,257			
Pound nets	102	258	391	751	60		60
Brush weirs	10			10			
Reef nets	9			9			
Dip nets	3		124	127	183		183
Fish wheels			34	34	20		20
Traps—							
Crab	2,080	1,575		3,655	585	1,785	2,370
Crawfish					380		380
Shovels	293	2,133		2,426	352	40	392
Tongs	107	16		123		3	3

Fisheries of the Pacific Coast States, 1927—Continued

OPERATING UNITS: By States—Continued

Item	California						Grand total
	Northern district	San Francisco district	Monterey district	Southern district: San Pedro section	Southern district: San Diego section	Total	
Fishermen:							
On vessels	50	305	49	1,699	491	2,594	4,897
On boats and shore	668	1,003	1,121	1,354	293	4,439	15,617
Total	718	1,308	1,170	3,053	784	7,033	20,514
Vessels:							
Steam		4				4	6
Net tonnage		241				241	257
Motor	20	19	6	249	108	402	753
Net tonnage	187	272	74	3,980	1,459	5,972	12,341
Sail		5				5	8
Net tonnage		1,782				1,782	2,837
Total vessels	20	28	6	249	108	411	767
Total net tonnage	187	2,295	74	3,980	1,459	7,995	15,435
Boats:							
Motor	165	566	331	716	183	1,961	6,737
Other	283	18	10	39		350	1,049
Apparatus:							
Troll lines	751	1,160	456	5,301	1,700	9,368	12,829
Hooks	3,892	5,798	2,736	5,301	1,700	19,427	33,271
Trawl, set, and hand lines	331	877	1,007	1,345	718	4,278	32,183
Hooks	40,910	117,194	126,325	300,436	109,422	694,287	2,107,733
Purse seines—							
Barracuda				25		25	25
Yards				11,075		11,075	11,075
Salmon							176
Yards							52,800
Sardine			2	71		73	73
Yards			620	27,382		28,002	28,002
Tuna				35		35	35
Yards				18,424		18,424	18,424
Haul seines	1	2		1		4	236
Yards	100	360		100		560	57,793
Lampara nets—							
Sardine		24	73	92	50	239	239
Yards		2,880	23,908	36,860	9,610	83,258	83,258
Squid			55			55	55
Yards			12,958			12,958	12,958
Drift gill nets, salmon	262	307				569	3,047
Square yards	178,815	753,685				932,500	6,101,180
Set gill nets, salmon							1,835
Square yards							367,000
Gill nets—							
Barracuda			1	54	28	83	83
Square yards			3,200	466,312	190,210	659,722	659,722
Sea bass		5	34	29	22	90	90
Square yards		12,400	119,893	150,280	116,830	399,403	399,403
Shad		261				261	261
Square yards		620,136				620,136	620,136
Striped bass		176				176	176
Square yards		373,824				373,824	373,824
Other	18	31	72	7	11	139	139
Square yards	5,250	32,395	200,576	8,000	14,246	260,467	260,467
Paranzella nets	1	9		4		14	14
Yards at mouth	17	150		60		227	227
Beam trawls		21				21	52
Yards at mouth		126				126	333
Drag bag nets							89
Yards							7,257
Pound nets							811
Brush weirs							10
Reef nets							9
Fyke nets		816				816	816
Trammel nets				42	19	61	61
Square yards				238,700	327,350	566,050	566,050
Dip nets	22					22	332
Fish wheels							54

Fisheries of the Pacific Coast States, 1927—Continued

OPERATING UNITS: By States—Continued

Item	California					Grand total
	Northern district	San Francisco district	Monterey district	Southern district		
				San Pedro section	San Diego section	Total
Apparatus—Continued.						
Traps—						
Crab	560	4,920	40			5,520	11,545
Crawfish							380
Lobster				3,370	2,540	5,910	5,910
Octopus			31			31	31
Shovels	7	16		78		101	2,919
Rakes		1	8			9	9
Tongs		6				6	132
Abalone outfits			11	5		16	16
Harpoons—							
Whale		4				4	4
Swordfish				7	8	15	15

CATCH: By States

Species	Washington		Oregon		California [1]		Total	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore					4,579,367	$517,354	4,579,367	$517,354
Anchovies					368,201	3,909	368,201	3,909
Barracuda					6,199,739	595,997	6,199,739	595,997
Bonito					1,716,957	49,997	1,716,957	49,997
Carp	922,337	$27,670	68,000	$2,040	63,014	1,617	1,053,351	31,327
Catfish					371,303	55,849	371,303	55,849
Cod, fresh	2,678	214					2,678	214
Cod, dry salted	2,587,255	117,000			2,746,880	186,644	5,334,135	303,644
Cod tongues	[illegible],600	1,500					17,600	1,500
Eels					5	1	5	1
Flounders:								
"California halibut"					1,302,283	187,268	1,302,283	187,268
"Sole"	223,992	8,971	640	25	10,298,290	467,227	10,522,922	476,223
Other	97,903	2,000			1,467,982	76,317	1,565,885	78,317
Grayfish	89,707	449			324,903	5,822	414,610	6,271
Hake					84,553	2,144	84,553	2,144
Halibut	10,713,348	1,437,161	371,546	54,478	569,937	65,628	11,654,831	1,557,267
Hardhead					32,898	2,838	32,898	2,838
Herring	811,660	8,117	54,000	1,080	1,168,321	23,253	2,033,981	32,450
Horse mackerel					467,376	18,489	467,376	18,489
Kingfish					529,267	16,365	529,267	16,365
"Lingcod"	1,017,443	38,812	67,598	2,729	555,078	23,284	1,640,119	64,825
Mackerel					4,740,639	121,389	4,740,639	121,389
Mullet					39,976	3,787	39,976	3,787
Perch	59,949	3,598			262,893	13,025	322,842	16,623
Pilchard or sardine					342,275,289	1,826,785	342,275,289	1,826,785
Pompano					55,127	6,408	55,127	6,408
Rock bass					525,840	36,955	525,840	36,955
Rockfishes	476,872	20,523	44,164	1,786	6,377,179	292,631	6,898,195	314,940
Sablefish	2,784,363	183,452	335,896	15,440	992,354	43,616	4,112,613	242,508
Salmon	97,211,405	6,302,108	28,069,573	2,745,604	6,511,929	641,175	131,792,907	9,691,887
Sculpin					114,209	9,956	114,209	9,956
Sea bass:								
Black					467,595	20,787	467,595	20,787
White, or squeteague					2,273,407	217,744	2,273,407	217,744
Shad	325,701	4,886	1,516,056	22,741	4,103,423	148,201	5,945,180	175,828
Sheepshead					159,397	6,282	159,397	6,282
Skates	1,156	24			232,740	5,184	263,896	5,208
Skipjack or striped tuna					33,807,011	1,260,847	33,807,011	1,230,847
Smelt	1,334,488	29,979	412,237	4,137	965,921	55,794	2,712,645	89,910
Splittail					10,601	636	10,601	636
Squawfish					7,865	629	7,865	629
Steelhead trout	2,166,821	154,187	2,196,062	157,396			4,362,883	311,583
Striped bass			1,852	185	647,594	92,035	649,446	92,221

[1] Taken off California and off Mexico.

Fisheries of the Pacific Coast States, 1927—Continued

CATCH: BY STATES—Continued

Species	Washington		Oregon		California		Total	
FISH—continued	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Sturgeon	81,460	$4,991	133,377	$8,205			214,837	$13,196
Suckers					1,020	$20	1,020	20
Swordfish					130,288	12,287	130,288	12,287
Tomcod	230	11			690	21	920	32
Tuna:								
Bluefin					4,898,465	311,517	4,898,465	311,517
Yellowfin					25,933,966	1,304,002	25,933,966	1,304,002
Whitebait					134,149	11,198	134,149	11,198
Whitefish					313,102	27,521	313,102	27,521
Yellowtail					4,224,853	195,463	4,224,853	195,463
Other fish	23,280	499			207,153	10,533	230,433	11,032
Total	120,949,628	8,346,152	33,271,001	3,015,846	473,291,029	8,979,432	627,511,658	20,341,430
SHELLFISH, ETC.								
Crabs	1,711,146	125,067	599,852	35,254	2,960,352	217,933	5,271,350	378,254
Crawfish			138,200	17,275			138,200	17,275
Sea crawfish or spiny lobster					1,490,958	275,351	1,490,958	275,351
Shrimp	38,781	5,817			1,697,365	28,007	1,736,146	33,824
Abalone					563,306	112,822	563,306	112,822
Clams:								
Cockle					788	608	788	608
Hard	249,862	37,479					249,862	37,479
Pismo					33,250	15,441	33,250	15,441
Razor	1,858,432	283,927	164,356	25,110			2,022,788	309,037
Soft					25,231	12,975	25,231	12,975
Mixed [1]			18,486	7,184	9,700	5,012	28,186	12,196
Mussels					2,963	394	2,963	394
Octopus	101,796	6,112			36,693	3,837	138,489	9,949
Oysters:								
Eastern market	113,360	53,060			55,492	23,782	168,852	76,842
Native market	615,792	284,351	2,700	2,250			618,492	286,601
Scallops	11,065	3,121					11,065	3,121
Squid					6,014,113	55,734	6,014,113	55,734
Trepang or sea cucumber	5,355	268					5,355	268
Total	4,705,589	799,202	923,594	87,073	12,890,211	751,896	18,519,394	1,638,171
WHALE PRODUCTS								
Whale oil					5,165,930	326,975	5,165,930	326,975
Grand total	125,655,217	9,145,354	34,194,595	3,102,919	491,347,170	10,058,303	651,196,982	22,306,576

[1] Consisted mostly of soft clams.

Fisheries of the Pacific Coast States, 1888 to 1927

[Expressed in thousands of pounds and thousands of dollars; that is, 000 omitted. Salt fish, except cod, has been converted to the equivalent of fresh fish]

Year	Washington		Oregon		California		Total	
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
1888	23,721	$811	26,268	$734	41,255	$2,465	91,244	$4,010
1892	36,706	932	28,826	872	58,396	3,023	123,928	4,827
1895	59,158	1,402	38,197	1,284	50,524	1,787	147,879	4,473
1899	122,085	2,871	22,802	856	77,985	2,552	222,872	6,279
1904	88,954	2,973	27,534	1,185	57,024	2,523	173,512	6,681
1908	100,352	3,513	28,216	1,356	46,486	1,970	175,054	6,839
1915	158,546	5,321	34,693	1,479	88,981	2,506	282,220	9,306
1922	67,564	4,954	22,134	1,256	191,439	6,774	281,137	12,984
1923	111,261	7,801	32,883	3,504	260,804	7,737	404,948	19,042
1924	89,223	7,123	39,578	3,204	344,894	9,725	473,695	20,052
1925	130,687	9,477	40,008	3,442	440,301	11,662	610,996	24,581
1926	89,637	7,943	32,998	3,068	398,651	7,904	521,286	18,915
1927	125,655	9,146	34,195	3,103	491,347	10,058	651,197	22,307

WASHINGTON

In 1927 Washington ranked second among the Pacific Coast States in the importance of its fisheries, employing 44 per cent of the total number of fishermen and accounting for 19 per cent of the total catch. There were 8,909 fishermen employed, which is 15 per cent more than in 1926. Of this total, 2,229 were employed on fishing vessels and 6,680 in the shore and boat fisheries.

The catch amounted to 125,655,217 pounds, valued at $9,145,354. This is an increase of 40 per cent in quantity and 15 per cent in the value of the catch as compared with the catch and its value in 1926. Of the total value of the catch, salmon accounted for 69 per cent, halibut 16 per cent, oysters 4 per cent, and clams 3 per cent. Of the total quantity, salmon accounted for 77 per cent, halibut 9 per cent, and sablefish, dry-salted cod, and clams each accounted for 2 per cent.

Operating units.—The catch of fishery products from Puget Sound, the coastal district of Washington, and that part of the Columbia River under the jurisdiction of Washington was taken by 8,909 fisherman, 3,026 motor and other small boats, 2 steam vessels, 324 motor vessels, 3 sailing vessels, and 14 major types of gear. The vessels had a combined capacity of 7,197 net tons.

Fisheries of Washington, 1927

CATCH: BY DISTRICTS:

Species	Puget Sound district		Coastal district		Columbia River district	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Carp					922,337	$27,670
Cod, fresh	2,678	$214				
Cod, dry-salted	2,587,255	117,000				
Cod tongues	17,600	1,500				
Flounders:						
Sole	223,992	8,971				
Other	97,903	2,000				
Grayfish	89,707	449				
Halibut	10,713,348	1,437,161				
Herring	811,660	8,117				
"Lingcod"	1,017,443	38,812				
Perch	59,949	3,598				
Rockfishes	476,852	20,523				
Sablefish	2,784,363	183,452				
Salmon:						
Blueback or sockeye	7,264,243	1,037,749	334,507	$27,876	214,631	30,048
Chinook	11,680,764	1,182,464	992,649	64,036	8,564,438	1,046,688
Chum	5,275,680	184,775	3,509,574	97,929	2,361,235	47,225
Humpback	41,370,178	1,362,620				
Silver	12,940,520	1,045,871	1,106,245	53,688	1,596,741	121,139
Shad					325,701	4,886
Skates	1,156	24				
Smelt	184,818	18,482			1,149,670	11,497
Steelhead trout	83,493	10,205	63,723	3,988	2,019,605	139,994
Sturgeon	784	118			80,676	4,873
Tomcod	230	11				
Other fish	22,739	456	541	43		
Total	97,707,355	6,664,572	6,007,239	247,560	17,235,034	1,434,020
SHELLFISH						
Crabs	479,386	32,685	1,231,760	92,382		
Shrimp	38,781	5,817				
Clams:						
Hard	249,862	37,479				
Razor			1,858,432	283,927		
Octopus	101,596	6,096	200	16		
Oysters:						
Eastern market	74,720	28,034	38,640	25,026		
Native market	582,000	274,456	33,792	9,895		
Scallops	11,065	3,121				
Trepang or sea cucumber	5,355	268				
Total	1,542,765	387,956	3,162,824	411,246		
Grand total	99,250,120	7,052,528	9,170,063	658,806	17,235,034	1,434,020

PUGET SOUND DISTRICT

The catch in this district in 1927 amounted to 99,250,120 pounds, valued at $7,052,528. Of the more important species comprising this catch, salmon amounted to 78,531,385 pounds, valued at $4,813,479; halibut, 10,713,348 pounds, valued at $1,437,161; sablefish, 2,784,363 pounds, valued at $183,452; dry-salted cod, 2,587,255 pounds, valued at $117,000; and oysters, 656,720 pounds, valued at $302,490.

Operating units.—The catch of fishery products in the Puget Sound District was taken by 4,373 fishermen, who used 1,410 motor and other small boats, 2 steam vessels, 319 motor vessels, 3 sailing vessels, and 13 major types of gear. The motor and sailing vessels had a combined capacity of 7,151 net tons.

Catch by gear.—Four types of gear accounted for 94 per cent of the fishery products taken in the Puget Sound fisheries during 1927. Listed in the order of their importance they were purse seines, which accounted for 37 per cent of the catch; pound nets, 30 per cent; trawl lines, 18 per cent; and troll lines, 9 per cent. The catch by purse seines, pound nets, and troll lines consisted almost entirely of salmon, and that by trawl lines was principally halibut, sablefish, and cod.

Fisheries of the Puget Sound district of Washington, 1927

OPERATING UNITS: BY GEAR

Items	Purse seines (salmon)	Haul seines	Beam trawls	Troll lines	Trawl, set, or hand lines	Gill nets		Pound nets
						Drift (salmon)	Set (salmon)	
Fishermen:								
On vessels	1,412	53	37	94	765	12		
On boats and shore	5	230	34	533	64	543	18	197
Total	1,417	283	71	627	829	555	18	197
Vessels:								
Steam			2					
Net tonnage			16					
Motor	175	19	12	44	103	6		
Net tonnage	3,886	269	145	320	2,002	42		
Sail					3			
Net tonnage					1,055			
Total vessels	175	19	14	44	106	6		
Total net tonnage	3,886	269	161	320	3,057	42		
Boats:								
Motor	1	67	17	428	18	390		81
Other	1	48			46		18	
Apparatus:								
Number	176	134	31	1,932	27,458	396	18	102
Length, yards	52,800	11,970						
Square yards						463,300	3,600	
Yards at mouth			207					
Hooks				7,728	1,386,146			

Fisheries of the Puget Sound district of Washington, 1927—Continued

OPERATING UNITS: By gear—Continued

Items	Brush weirs	Reef nets	Drag bag nets	Dip nets	Traps, crab	Shovels	Tongs	Total, exclusive of duplication
Fishermen:								
On vessels			37		27			2,219
On boats and shore	12	18	150	3	120	293	107	2,154
Total	12	18	187	3	147	293	107	4,373
Vessels:								
Steam								2
Net tonnage								16
Motor			13		10			319
Net tonnage			227		174			6,080
Sail								3
Net tonnage								1,055
Total vessels			13		10			324
Total net tonnage			227		174			7,151
Boats:								
Motor	6	9	55	3	94		15	1,127
Other			20				165	283
Apparatus:								
Number	10	9	88	3	2,080	293	107	
Length, yards			7,157					

CATCH: By gear

Species	Purse seines		Haul seines		Beam trawls		Troll lines	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh					2,523	$202		
Flounders:								
"Sole"	55	$2	5,638	$226	214,721	8,589		
Other	150	3	12,811	256	80,799	1,658		
Grayfish			42,000	210				
Halibut	32	1						
Herring			276,665	2,767				
"Lingcod"	325	10	1,829	55	3,205	96		
Perch			45,376	2,722	391	24		
Rockfishes	278	20	7,248	507	6,405	448		
Salmon:								
Blueback or sockeye	3,399,851	485,693	42,707	6,101			707	$101
Chinook	554,140	56,333	29,326	2,999			5,241,140	524,207
Chum	3,992,490	139,829	2,410	84				
Humpback	24,650,950	789,390	272,349	9,338			7,707	264
Silver	4,349,808	350,183	15,840	1,386			3,387,928	240,444
Skates			644	13	458	9		
Smelt	578	58	121,866	12,187				
Steelhead trout	1,557	190					54	7
Tomcod			230	11				
Other fish	1,760	35	8,347	167	6,280	126		
Total	36,951,974	1,821,747	885,286	39,029	314,782	11,152	8,637,536	765,023
SHELLFISH, ETC.								
Shrimp					38,781	5,817		
Octopus			55	3	90	6		
Scallops					11,065	3,121		
Trepang or sea cucumber					5,355	268		
Total			55	3	55,291	9,212		
Grand total	36,951,974	1,821,747	885,341	39,032	370,073	20,364	8,637,536	765,023

Fisheries of the Puget Sound district of Washington, 1927—Continued

CATCH: BY GEAR—Continued

Species	Trawl lines		Set and hand lines		Drift gill nets		Set gill nets	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Cod, fresh			155	$12				
Cod, dry salted	2,587,255	$117,900						
Cod tongues	17,600	1,500						
Flounders:								
"Sole"			68	3			3,161	$136
Other							316	6
Grayfish			30,507	153			4,200	21
Halibut	10,607,956	1,426,356	105,000	10,750				
"Lingcod"	977,689	37,620	22,143	664			10,605	318
Perch			2,267	137			2,950	177
Rockfishes	442,756	18,136	13,176	923			2,405	168
Sablefish	2,784,013	183,424	350	28				
Salmon:								
Blueback or sockeye					26,187	$3,741		
Chinook					826,760	84,555		
Chum					282,450	9,921	70	2
Humpback					203,422	6,974		
Silver					866,880	75,852	2,112	185
Skates			54	2				
Smelt					1,024	102		
Steelhead trout					18,810	2,299		
Other fish			818	17				
Total	17,417,269	1,784,036	174,538	12,689	2,225,533	183,444	25,819	1,013
SHELLFISH, ETC.								
Octopus			99,792	5,987			550	33
Grand total	17,417,269	1,784,036	274,330	18,676	2,225,533	183,444	26,369	1,046

Species	Pound nets		Brush weirs		Reef nets		Drag bag nets	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders:								
"Sole"	9	$1					340	$14
Other	3,808	76					19	1
Grayfish			13,000	$65				
Halibut	360	54						
Herring	61,810	618	322,600	3,226			149,550	1,496
"Lingcod"	1,647	49						
Perch	76	5	260	15			8,629	518
Rockfishes	4,584	321						
Salmon:								
Blueback or sockeye	3,753,134	536,162			29,449	$4,207	12,208	1,744
Chinook	5,013,998	512,795			968	99	14,432	1,476
Chum	994,720	34,815			2,650	93	890	31
Humpback	16,062,233	550,705			144,007	4,937	29,510	1,012
Silver	4,295,496	375,856			19,528	1,709	2,928	256
Smelt							60,920	6,092
Steelhead trout	63,072	7,709						
Sturgeon	784	118						
Other fish	4,434	89					1,100	22
Total	30,260,165	2,019,373	335,860	3,306	196,602	11,045	280,526	12,662
SHELLFISH, ETC.								
Octopus	1,109	67						
Grand total	30,261,274	2,019,440	335,860	3,306	196,602	11,045	280,526	12,662

Fisheries of the Puget Sound district of Washington, 1927—Continued

CATCH: BY GEAR—Continued

Species	Dip nets		Traps		Shovels		Tongs	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Herring	1,035	$10						
Smelt	430	43						
Total	1,465	53						
SHELLFISH, ETC.								
Crabs			479,386	$32,685				
Clams, hard					249,862	$37,479		
Oysters:								
Eastern market							74,720	$28,034
Native market							582,000	274,456
Total			479,386	32,685	249,862	37,479	656,720	302,490
Grand total	1,465	53	479,386	32,685	249,862	37,479	656,720	302,490

COASTAL DISTRICT

The catch in the coastal district amounted to 9,170,063 pounds, valued at $658,806. Considered according to quantity, the important species comprising this catch were salmon, 5,942,975 pounds, valued at $243,529; razor clams, 1,858,432 pounds, valued at $283,927; and crabs, 1,231,760 pounds, valued at $92,382.

Operating units.—The catch of fishery products in the coastal district of Washington during 1927 was taken by 2,592 fishermen, who used 468 motor and other small boats, 5 motor vessels, and 6 major types of gear. The vessels had a combined capacity of 46 net tons.

Catch by gear.—Five types of gear accounted for 98 per cent of the fishery products taken in this district during 1927. In the order of their importance they were pound nets, which accounted for 40 per cent of the catch; shovels, 20 per cent; set gill nets, 15 per cent; crab traps, 13 per cent; and drift gill nets, 10 per cent. The catch by pound nets and set and drift gill nets consisted almost entirely of salmon, that by shovels entirely of razor clams, and that by crab traps exclusively crabs.

Fisheries of the coastal district of Washington, 1927

OPERATING UNITS: BY GEAR

Items	Gill nets		Pound nets	Drag bag nets	Traps (crab)	Shovels	Tongs	Total, exclusive of duplication
	Drift (salmon)	Set (salmon)						
Fishermen:								
On vessels					10			10
On boats and shore	147	209	270	2	57	2,133	16	2,582
Total	147	209	270	2	67	2,133	16	2,592
Vessels, motor					5			5
Net tonnage					46			46
Boats:								
Motor	107	42	135	1	57		5	290
Other		152					26	178
Apparatus:								
Number	107	300	258	1	1,575	2,133	16	
Length, yards				100				
Square yards	128,880	60,000						

Fisheries of the coastal district of Washington, 1927—Continued

CATCH: BY GEAR

Species	Drift gill nets		Set gill nets		Pound nets		Drag bag nets	
FISH								
Salmon:	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Blueback or sockeye			334, 507	$27, 876				
Chinook	382, 674	$24, 957	79, 572	4, 488	515, 545	$33, 622	14, 858	$969
Chum	315, 000	9, 450	670, 770	12, 764	2, 515, 224	75, 458	8, 580	257
Silver	219, 630	10, 981	269, 235	11, 838	615, 760	30, 788	1, 620	81
Steelhead trout	4, 510	361	43, 853	2, 398	15, 360	1, 229		
Other fish	514	41			27	2		
Total	922, 328	45, 790	1, 397, 937	59, 364	3, 661, 916	141, 099	25, 058	1, 307
SHELLFISH, ETC.								
Octopus			200	16				
Grand total	922, 328	45, 790	1, 398, 137	59, 380	3, 661, 916	141, 099	25, 058	1, 307

Species	Crab traps		Shovels		Tongs	
SHELLFISH, ETC.	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs	1, 231, 760	$92, 382				
Clams, razor			1, 858, 432	$283, 927		
Oysters:						
Eastern market					38, 640	$25, 026
Native market					33, 792	9, 895
Total	1, 231, 760	92, 382	1, 858, 432	283, 927	72, 432	34, 921

COLUMBIA RIVER DISTRICT

The catch in this district amounted to 17,235,034 pounds, valued at $1,434,020. Considered according to quantity, the more important species comprising this catch were salmon, 12,737,045 pounds, valued at $1,245,100; steelhead trout, 2,019,605 pounds valued at $139,994; smelt, 1,149,670 pounds valued at $11,497; and carp, 922,337 pounds valued at $27,670.

Operating units.—The catch of fishery products in the Columbia River District of Washington during 1927 was taken by 1,944 fisherman, who used 1,148 motor and other small boats and 6 major type of gear.

Catch by gear.—Four types of gear accounted for 91 per cent of the fishery products taken in this district during 1927. In the order of their importance they were drift gill nets, which accounted for 37 per cent of the catch; pound nets, 33 per cent; haul seines, 14 per cent; and dip nets, 7 per cent. The catch by drift gill nets and pound nets was principally salmon, that by haul seines chiefly salmon and carp, and that by dip nets almost exclusively smelt.

Fisheries of the Columbia River district of Washington, 1927

OPERATING UNITS: By gear

Items	Haul seines	Troll lines	Set lines	Gill nets		Pound nets	Dip nets	Fish wheels	Total, exclusive of duplication
				Drift (salmon)	Set (salmon)				
Fishermen, on boats and shore	455	166	22	762	186	335	124	34	1,944
Boats:									
Motor	44	136	22	559	186	190	62		1,113
Other	35								35
Apparatus:									
Number	49	544	57	559	314	391	124	34	
Length, yards	16,596								
Square yards				1,159,500	62,800				
Hooks		2,176	5,700						

CATCH: By gear

Species	Haul seines		Troll lines		Set lines		Drift gill nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Carp	922,337	$27,670						
Salmon:								
Blueback or sockeye	21,856	3,060					83,764	$11,727
Chinook	732,495	97,378	269,086	$38,177			4,241,207	543,935
Chum	27,216	544					1,229,382	24,588
Silver	12,043	930	528,405	31,476			248,899	20,907
Shad	179,828	2,697					61,514	923
Steelhead trout	467,689	33,842	37	3			443,988	29,991
Sturgeon	693	41			6,534	$423	49,383	2,954
Total	2,364,157	166,162	797,528	69,656	6,534	423	6,358,137	635,025

Species	Set gill nets		Pound nets		Dip nets		Fish wheels	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Salmon:								
Blueback or sockeye	9,736	$1,363	36,417	$5,098			62,858	$8,800
Chinook	92,336	12,927	2,932,649	312,738			296,665	41,533
Chum	19,092	382	1,085,545	21,711				
Silver	6,912	587	800,402	67,234			80	5
Shad	3,379	51	45,188	678			35,792	537
Smelt					1,149,670	$11,497		
Steelhead trout	287,506	22,138	769,926	50,992	8,411	505	42,048	2,523
Sturgeon	5,212	365	7,878	436			10,976	654
Total	424,173	37,813	5,678,005	458,887	1,158,081	12,002	448,419	54,052

OREGON

In 1927 Oregon employed 22 per cent of the total number of fishermen and accounted for 5 per cent of the total catch of the Pacific Coast States. There were 4,572 fishermen employed, which is 7 per cent less than in 1926. Of this total, 74 were on fishing vessels and 4,498 in the shore and boat fisheries.

The catch amounted to 34,194,595 pounds, valued at $3,102,919. This is an increase of 4 per cent in quantity and 1 per cent in the value of the catch as compared with the catch and its value in 1926. Of the total value of the catch, salmon accounted for 88 per cent, steelhead trout 5 per cent, and halibut 2 per cent. Other species individually amounted to less than $50,000 in value. Of the total quantity, salmon accounted for 82 per cent, steelhead trout 6 per cent, and shad 4 per cent.

Operating units.—The catch of fishery products from the Columbia River district and coastal district of Oregon was taken by 4,572 fishermen, 2,449 motor and other small boats, 27 motor vessels, and 10 major types of gear. The vessels had a combined capacity of 243 net tons.

Fisheries of Oregon, 1927

CATCH: BY DISTRICTS

Species	Columbia River District		Coastal District	
FISH	*Pounds*	*Value*	*Pounds*	*Value*
Carp	68,000	$2,040		
Flounders ("sole")			640	$25
Halibut	196,744	30,856	174,802	23,622
Herring			54,000	1,080
"Lingcod"	31,310	1,263	36,288	1,466
Rockfishes	25,721	1,048	18,443	738
Sablefish	335,896	15,440		
Salmon:				
Blueback or sockeye	237,436	33,241		
Chinook	14,641,110	1,877,175	2,490,826	283,791
Chum	1,588,753	31,775	2,090,301	41,806
Silver	2,444,091	166,588	4,577,056	311,228
Shad	785,495	11,783	730,561	10,958
Smelt	411,732	4,117	505	20
Steelhead trout	1,724,982	115,492	471,080	41,904
Striped bass			1,852	185
Sturgeon	130,835	8,109	2,542	96
Total	22,622,105	2,298,927	10,648,896	716,919
SHELLFISH, ETC.				
Crabs	103,048	7,026	496,804	28,228
Crawfish	138,200	17,275		
Clams, razor	164,356	25,110		
Clams, mixed			18,486	7,184
Oysters, native market			2,700	2,250
Total	405,604	49,411	517,990	37,662
Grand total	23,027,709	2,348,338	11,166,886	754,581

COLUMBIA RIVER DISTRICT

The catch in the Columbia River district of Oregon amounted to 23,027,709 pounds, valued at $2,348,338. Considered according to quantity, the more important species comprising this catch were salmon, 18,911,390 pounds, valued at $2,108,779; steelhead trout, 1,724,982 pounds, valued $115,492; and sablefish, 335,896 pounds, valued at $15,440.

Operating units.—The catch of fishery products in the Columbia River district of Oregon during 1927 was taken by 3,292 fishermen, who used 1,441 motor and other small boats, 21 motor vessels, and 9 major types of gear. The combined capacity of the vessels amounted to 194 net tons.

Catch by gear.—Four types of gear accounted for 91 per cent of the fishery products taken in this district during 1927. In the order of their importance they were gill nets, which accounted for 63 per cent of the catch; haul seines, 13 per cent; troll lines, 12 per cent; and pound nets, 3 per cent. The catch by these gears was principally salmon and steelhead trout.

Fisheries of the Columbia River district of Oregon, 1927

OPERATING UNITS: By gear

Items	Haul seines	Troll lines	Set lines	Gill nets		Pound nets	Dip nets	Fish wheels	Traps		Shovels	Total exclusive of duplication
				Drift (salmon)	Set (salmon)				Crab	Crawfish		
Fishermen:												
On vessels		24	41									62
On boats and shore	693	191	23	1,629	98	72	183	20	39	19	352	3,230
Total	693	215	64	1,629	98	72	183	20	39	19	352	3,292
Vessels, motor		12	10									21
Net tonnage		84	124									194
Boats:												
Motor	53	173	23	1,042	98	36			39	19		1,404
Other	27						10					37
Apparatus:												
Number	49	752	282	1,042	240	60	183	20	585	380	352	
Length, yards	28,667											
Square yards				2,856,000	48,000							
Hooks		3,008	16,200									

CATCH: By gear

Species	Haul seines		Troll lines		Set lines		Gill nets	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Carp	68,000	$2,040						
Halibut					196,744	$30,856		
"Lingcod"					31,310	1,263		
Rockfishes					25,721	1,048		
Sablefish					335,896	15,440		
Salmon:								
Blueback or sockeye	28,916	4,048					184,885	$25,884
Chinook	2,027,772	258,511	1,126,935	$147,536			10,839,129	1,395,393
Chum	14,921	298	9	1			1,467,062	29,341
Silver	98,095	8,251	1,672,353	101,186			503,438	42,738
Shad	345,919	5,189					371,007	5,565
Steelhead trout	507,246	31,988	692	42			1,028,657	70,719
Sturgeon	2,690	147			118	8	109,679	6,807
Total	3,093,559	310,472	2,799,989	248,765	589,789	48,615	14,503,857	1,576,447

Species	Pound nets		Dip nets		Fish wheels		Traps		Shovels	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Salmon:										
Blueback or sockeye	10,308	$1,443	1,344	$188	11,983	$1,678				
Chinook	272,990	23,335	32,990	4,619	341,294	47,781				
Chum	106,761	2,135								
Silver	170,199	14,412	6	1						
Shad	63,331	950			5,238	79				
Smelt			411,732	4,117						
Steelhead trout	168,642	11,427	11,821	841	7,924	475				
Sturgeon	1,573	110	12,911	767	3,864	270				
Total	793,804	53,812	470,804	10,533	370,303	50,283				
SHELLFISH, ETC.										
Crabs							103,048	$7,026		
Crawfish							138,200	17,275		
Clams, razor									164,356	$25,110
Total							241,248	24,301	164,356	25,110
Grand total	793,804	53,812	470,804	10,533	370,303	50,283	241,248	24,301	164,356	25,110

COASTAL DISTRICT

The catch in the coastal district of Oregon amounted to 11,166,886 pounds, valued at $754,581. Considered according to quantity, the more important species comprising the catch were salmon, 9,158,183 pounds, valued at $636,825; crabs, 496,804 pounds, valued at $28,228; steelhead trout, 471,080 pounds, valued at $41,904; and halibut, 174,802 pounds, valued at $23,622.

Operating units.—The catch of fishery products in the coastal district of Oregon during 1927 was taken by 1,280 fishermen, who used 1,008 motor and other small boats, 6 motor vessels, and 5 major types of gear. The combined capacity of the vessels amounted to 49 net tons.

Catch by gear.—Three types of gear accounted for 98 per cent of the fishery products taken in this district during 1927. In the order of their importance they were gill nets, which accounted for 81 per cent of the catch; troll lines, 13 per cent; and traps, 4 per cent. The catch by gill nets and troll lines was principally salmon, and that by traps was exclusively crabs.

Fisheries of the coastal district of Oregon, 1927

OPERATING UNITS: BY GEAR

Items	Troll lines	Set lines	Gill nets		Crab traps	Shovels	Tongs	Total, exclusive of duplication
			Drift (salmon)	Set (salmon)				
Fishermen:								
On vessels	10	2						12
On boats and shore	65	12	602	513	119	40	3	1,268
Total	75	14	602	513	119	40	3	1,280
Vessels, motor	5	1						6
Net tonnage	41	8						49
Boats:								
Motor	52	8	374	350	119		1	842
Other				163			3	166
Apparatus:								
Number	233	108	374	963	1,785	40	3	
Square yards			561,000	192,600				
Hooks	932	5,400						

CATCH: BY GEAR

Fish	Troll lines		Set lines		Gill nets	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Flounders ("sole")			640	$25		
Halibut			174,802	23,622		
Herring					54,000	$1,080
"Lingcod"			36,288	1,466		
Rockfishes			18,443	738		
Salmon:						
Chinook	560,553	$63,296			1,930,273	220,495
Chum					2,090,301	41,806
Silver	836,558	53,134			3,740,498	258,094
Shad					730,561	10,958
Smelt					505	20
Steelhead trout	355	24			470,725	41,880
Striped bass					1,852	185
Sturgeon					2,542	96
Total	1,397,466	116,454	230,173	25,851	9,021,257	574,614

Fisheries of the coastal district of Oregon, 1927—Continued

CATCH: By gear—Continued

Shellfish, etc.	Traps		Shovels		Tongs	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Crabs	496,804	$28,228				
Clams, mixed			18,486	$7,184		
Oysters, native market					2,700	$2,250
Total	496,804	28,228	18,486	7,184	2,700	2,250

CALIFORNIA

In 1927 California was by far the most important among the Pacific Coast States in the importance of its fisheries, employing 34 per cent of the total number of fishermen and accounting for 76 per cent of the total catch. There were 7,033 fishermen employed, which is 18 per cent more than in 1926. Of this total, 2,594 were employed on fishing vessels and 4,439 in the shore and boat fisheries.

The catch amounted to 491,347,170 pounds, valued at $10,058,303. This is an increase of 23 per cent in quantity and 27 per cent in the value of the catch as compared with the catch and its value in 1926. Of the total value of the catch, that for pilchard or sardine accounted for 18 per cent; yellowfin tuna, 13 per cent; skipjack or striped tuna, 13 per cent; flounders, 7 per cent; salmon, 6 per cent; barracuda, 6 per cent; and albacore, 5 per cent. Other species were valued individually at less than $500,000. Of the total quantity, pilchard or sardine accounted for 70 per cent, skipjack or striped tuna 7 per cent, yellowfin tuna 5 per cent, and flounders 3 per cent. Of the total catch, 429,219,429 pounds, valued at $6,978,065, were taken off the coast of California; the remainder was taken off the coast of Mexico, except the salted cod, which was taken in Alaska waters.

Operating units.—The catch of fishery products from the northern, San Francisco, Monterey, and southern districts of California was taken by 7,033 fishermen, 2,311 motor and small boats, 4 steam vessels, 402 motor vessels, 5 sailing vessels, and 19 major types of gear. The vessels had a combined capacity of 7,995 net tons.

Fisheries of California, 1927

CATCH: BY DISTRICTS

Species	Northern district		San Francisco district		Monterey district	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore					1,051	$158
Anchovies			278,125	$2,781	56,600	529
Barracuda					2,644	266
Bonito					3,677	168
Carp	2,896	$65	57,517	1,422		
Catfish	79,152	11,873	292,151	43,976		
Cod, dry salted			[1] 2,746,880	186,644		
Eels			5	1		
Flounders:						
"California halibut"					10,577	1,426
"Sole"	204,999	8,101	8,987,680	404,507	870,311	43,481
Other	96,713	5,283	1,158,702	60,767	196,302	9,110
Grayfish			187,444	3,749	10,400	52
Hake			75,951	1,929	8,602	215
Halibut	557,140	64,098	12,797	1,530		
Hardhead			32,898	2,838		
Herring	50,294	797	1,098,560	21,971	2,980	89
Horse mackerel					56,088	2,342
Kingfish			47,521	2,425	133,621	7,046
"Lingcod"	64,451	1,777	329,356	14,162	159,977	7,296
Mackerel			138	6	1,040,245	31,776
Perch	43,065	1,885	96,722	3,666	40,181	1,440
Pilchard or sardine	168	5	18,741,812	116,580	173,956,587	877,021
Pompano					177	108
Rockfishes	124,346	3,177	901,811	36,072	1,798,298	71,219
Sablefish	392,674	13,865	403,797	19,880	193,889	9,771
Salmon	3,385,349	320,153	2,409,532	237,058	717,027	86,961
Sculpin					752	22
Sea bass:						
Black					100	4
White or squeteague			23,956	2,995	47,511	5,330
Shad			4,103,423	148,201		
Skates	390	4	221,928	4,438	21,052	330
Skipjack or striped tuna					1,051	52
Smelt	35,305	2,593	123,630	10,809	179,764	12,007
Split-tail			10,601	636		
Squawfish			7,865	629		
Striped bass			647,594	42,036		
Suckers			1,620	20		
Tomcod			690	21		
Whitebait	101,272	7,560	30,975	3,485	1,902	153
Other fish	1,925	38	25,661	996	17,189	609
Total	5,140,139	441,274	43,056,742	1,426,230	179,528,555	1,168,981
SHELLFISH, ETC.						
Crabs	161,712	10,196	2,539,320	190,449	259,320	17,288
Shrimp			1,697,365	28,007		
Abalone	17,200	3,440			542,489	108,498
Clams:						
Cockle	173	80	615	528		
Soft			25,231	12,975		
Mixed	1,702	696	7,102	4,058		
Mussels			419	64	2,533	329
Octopus	519	42	3,389	362	32,434	3,384
Oysters, eastern			55,492	23,782		
Squid					5,985,482	54,288
Total	181,306	14,454	4,328,933	260,225	6,822,258	183,787
WHALE PRODUCTS						
Whale oil			5,165,930	326,975		
Grand total	5,321,445	455,728	52,551,605	2,013,430	186,350,813	1,352,768

[1] The catch of cod was made in Alaska waters.

Fisheries of California—Continued

CATCH: BY DISTRICTS—Continued

Species	Southern district—Off California			
	San Pedro section		San Diego section	
FISH	*Pounds*	*Value*	*Pounds*	*Value*
Albacore	3,719,880	$425,108	734,441	$78,923
Anchovies	32,126	575	1,350	24
Barracuda	3,518,483	283,721	834,456	62,834
Bonito	730,723	21,929	386,025	10,098
Carp	2,601	130		
Flounders:				
"California halibut"	744,516	112,962	62,148	8,583
"Sole"	231,519	10,693	3,759	443
Other	16,265	1,157		
Grayfish	90,872	1,845	36,187	176
Herring	542	16	15,945	380
Horse mackerel	406,451	15,812		
Kingfish	342,904	6,770	5,221	124
"Lingcod"	1,294	49		
Mackerel	3,131,462	77,778	557,058	11,369
Mullet	6,415	556	7,171	772
Perch	73,368	5,401	1,793	77
Pilchard or sardine	143,548,925	789,520	6,027,797	43,659
Pompano	3,758	1,796	790	225
Rock bass	336,429	24,411	149,353	9,917
Rockfishes	2,395,717	126,801	1,149,151	54,923
Sablefish	1,994	100		
Salmon	21	3		
Sculpin	75,404	6,830	38,053	3,104
Sea bass:				
Black	65,061	3,385	117,565	4,928
White or squeteague	560,520	64,195	174,572	16,995
Sheepshead	112,753	4,469	46,034	1,794
Skates	19,370	412		
Skipjack or striped tuna	4,791,589	204,239	1,011,009	42,963
Smelt	604,550	28,864	22,352	1,498
Swordfish	10,206	704	120,082	11,583
Tuna:				
Bluefin	4,362,235	281,696	536,151	29,816
Yellowfin	549,999	34,351	45,248	2,715
Whitefish	202,398	21,333	85,196	4,643
Yellowtail	403,796	23,466	1,031,660	49,162
Other fish	126,812	6,362		
Total	171,220,958	2,587,439	13,200,567	451,728
SHELLFISH, ETC.				
Sea crawfish or spiny lobster	346,421	71,898	161,702	27,231
Abalone	3,617	884		
Clams:				
Pismo	33,250	15,441		
Mixed	58	22		
Mussels	11	1		
Octopus	351	49		
Squid	28,329	1,416	302	30
Total	412,037	89,711	162,004	27,231
Grand total	171,632,995	2,677,150	13,362,571	478,989

Fisheries of California—Continued

CATCH: BY DISTRICTS—Continued

Species	Southern district—Off Mexico				Total	
	San Pedro section		San Diego section			
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore	23,073	$2,423	100,922	$10,742	4,578,316	$517,196
Anchovies					33,476	599
Barracuda	1,569,186	211,326	274,970	37,850	6,197,095	595,731
Bonito	561,238	16,829	35,294	973	1,713,280	49,829
Carp					2,601	130
Flounders:						
"California halibut"	1,469	234	483,573	64,063	1,291,706	185,842
"Sole"			22	2	235,300	11,138
Other					16,265	1,157
Grayfish					127,059	2,021
Herring					16,487	396
Horse mackerel	4,837	335			411,288	16,147
Kingfish					348,125	6,894
"Lingcod"					1,294	49
Mackerel	308	3	11,428	457	3,700,256	89,607
Mullet	9,074	925	17,316	1,534	39,976	3,787
Perch	6,989	519	775	37	82,925	6,034
Pilchard or sardine					149,576,722	833,179
Pompano	33,247	2,519	17,155	1,760	54,950	6,360
Rock bass	4,672	423	35,386	2,204	525,840	36,955
Rockfishes	1,059	66	6,797	373	3,552,724	182,163
Sablefish					1,994	100
Salmon					21	3
Sculpin					113,457	9,934
Sea bass:						
Black	14,445	718	270,424	11,752	467,495	20,783
White or squeteague	847,102	76,165	619,746	52,064	2,201,940	209,419
Sheepshead			610	19	159,397	6,282
Skates					19,370	412
Skipjack or striped tuna	13,321,014	445,961	14,682,348	567,632	33,805,960	1,260,795
Smelt			320	23	627,222	30,385
Swordfish					130,288	12,287
Tuna:						
Bluefin			79	5	4,898,465	311,517
Yellowfin	12,783,271	604,185	12,555,448	662,751	25,933,966	1,304,002
Whitefish	9,878	741	15,630	804	313,102	27,521
Yellowtail	1,239,508	45,809	1,549,889	77,026	4,224,853	195,463
Other fish	16,343	1,329	19,223	1,199	162,378	8,890
Total	30,446,713	1,410,510	30,697,355	1,493,270	245,565,593	5,942,947
SHELLFISH, ETC.						
Sea crawfish or spiny lobster			982,835	176,222	1,490,958	275,351
Abalone					3,617	884
Clams:						
Pismo					33,250	15,441
Mixed	838	236			896	258
Mussels					11	1
Octopus					351	49
Squid					28,631	1,446
Total	838	236	982,835	176,222	1,557,714	293,430
Grand total	30,447,551	1,410,746	31,680,190	1,669,492	247,123,307	6,236,377

Fisheries of California, 1927—Continued

TOTAL CATCH

Species	Off California		Off Mexico	
	Pounds	*Value*	*Pounds*	*Value*
FISH				
Albacore	4,455,372	$504,189	123,995	$13,165
Anchovies	368,201	3,909		
Barracuda	4,355,583	346,821	1,844,156	249,176
Bonito	1,120,425	32,195	596,532	17,802
Carp	63,014	1,617		
Catfish	371,303	55,849		
Cod, dry salted	[1] 2,746,880	186,644		
Eels	5	1		
Flounders:				
"California halibut"	817,241	122,971	485,042	64,297
"Sole"	10,298,268	467,225	22	2
Other	1,467,982	76,317		
Grayfish	324,903	5,822		
Hake	84,553	2,144		
Halibut	569,937	65,628		
Hardhead	32,898	2,838		
Herring	1,168,321	23,253		
Horse mackerel	462,539	18,154	4,837	335
Kingfish	529,267	16,355		
"Lingcod"	555,078	23,284		
Mackerel	4,728,903	120,929	11,736	460
Mullet	13,586	1,328	26,390	2,459
Perch	255,129	12,469	7,764	556
Pilchard or sardine	342,275,289	1,826,785		
Pompano	4,725	2,129	50,402	4,279
Rock bass	485,782	34,328	40,058	2,627
Rockfishes	6,369,323	292,192	7,856	439
Sablefish	992,354	43,616		
Salmon	6,511,929	644,175		
Sculpin	114,209	9,956		
Sea bass:				
Black	182,726	8,317	284,869	12,470
White or squeteague	806,559	89,515	1,466,848	128,229
Shad	4,103,423	148,201		
Sheepshead	158,787	6,263	610	19
Skates	262,740	5,184		
Skipjack or striped tuna	5,803,649	247,254	28,003,362	1,013,593
Smelt	965,601	55,771	320	23
Splittail	10,601	636		
Squawfish	7,865	629		
Striped bass	647,594	92,036		
Suckers	1,020	20		
Swordfish	130,288	12,287		
Tomcod	690	21		
Tuna:				
Bluefin	4,898,386	311,512	79	5
Yellowfin	595,247	37,066	25,338,719	1,266,936
Whitebait	134,149	11,198		
Whitefish	287,594	25,976	25,508	1,545
Yellowtail	1,435,456	72,628	2,789,397	122,835
Other fish	171,587	8,005	35,566	2,528
Total	412,146,961	6,075,652	61,144,068	2,903,780
SHELLFISH, ETC.				
Crabs	2,960,352	217,933		
Sea crawfish or spiny lobster	508,123	99,129	982,835	176,222
Shrimp	1,697,365	28,007		
Abalone	563,306	112,822		
Clams:				
Cockle	788	608		
Pismo	33,250	15,441		
Soft	25,231	12,975		
Mixed	8,862	4,776	838	236
Mussels	2,963	394		
Octopus	36,693	3,837		
Oysters, eastern market	55,492	23,782		
Squid	6,014,113	55,734		
Total	11,906,538	575,438	983,673	176,458
WHALE PRODUCT				
Whale oil	5,165,930	326,975		
Grand total	429,219,429	6,978,065	62,127,741	3,080,238

[1] The catch of cod was made in Alaska waters.

NORTHERN DISTRICT

The catch in the northern district of California amounted to 5,321,445 pounds, valued at $455,728. Considered according to quantity, the more important species comprising this catch were salmon 3,385,349 pounds, valued at $320,153; halibut, 557,140 pounds, valued at $64,098; sablefish, 392,674 pounds, valued at $13,865; and flounders, 301,712 pounds, valued at $13,384.

Operating units.—The catch of fishery products in this district during 1927 was taken by 718 fishermen, who used 448 motor and other small boats, 20 motor vessels, and 7 major types of gear. The combined capacity of the vessels amounted to 187 net tons.

Catch by gear.—Three types of gear accounted for 95 per cent of the fishery products taken in this district during 1927. In the order of their importance, they were lines, which accounted for 76 per cent of the catch; gill nets, 13 per cent; and paranzella nets, 6 per cent. The catch by gill nets consisted principally of salmon, that by lines chiefly salmon, halibut, and sablefish, and that by paranzella nets mainly flounders.

Fisheries of the northern district of California, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Paranzella nets	Troll lines	Trawl lines	Gill nets		Dip nets	Crab traps	Shovels	Total, exclusive of duplication
					Drift (salmon)	Other				
Fishermen:										
On vessels		7	30	25						50
On boats and shore	3		192	180	447	18	22	34	7	668
Total	3	7	222	205	447	18	22	34	7	718
Vessels: Motor		2	15	9						20
Net tonnage		14	123	94						187
Boats:										
Motor	1		161	134		18	22	31		165
Other	1			20	262					283
Apparatus:										
Number	1	1	751	331	262	18	22	560	7	
Length, yards	100									
Square yards					178,815	5,250				
Yards at mouth		17								
Hooks			3,892	40,910						

NOTE.—Abalone outfits also were operated in this district by fishermen from the Monterey district.

Fisheries in the northern district of California, 1927—Continued

CATCH: BY GEAR

Species	Haul seines		Paranzella nets		Lines [1]		Gill nets	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Carp	2,896	$65						
Catfish					79,152	$11,873		
Flounders:								
"Sole"			200,625	$8,003	4,374	98		
Other			74,958	4,170	21,755	1,113		
Halibut			4,030	403	553,110	63,695		
Herring							50,294	$797
"Lingcod"			4,030	111	60,421	1,666		
Perch					30,153	1,350	12,912	535
Pilchard or sardine							168	5
Rockfishes			17,630	353	106,716	2,824		
Sablefish					392,674	13,865		
Salmon					2,769,283	278,036	616,066	42,117
Skates			390	4				
Smelt					7,605	565	27,700	2,028
Other fish					1,925	38		
Total	2,896	65	301,663	13,044	4,027,168	375,123	707,140	45,482
SHELLFISH, ETC.								
Crabs			96	6				
Grand total	2,896	65	301,759	13,050	4,027,168	375,123	707,140	45,482

Species	Dip nets		Abalone outfits		Shovels		Traps	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Whitebait	101,272	$7,560						
SHELLFISH, ETC.								
Crabs							161,616	$10,190
Abalone			17,200	$3,440				
Clams:								
Cockle					173	$80		
Mixed					1,702	696		
Octopus							519	42
Total			17,200	3,440	1,875	776	162,135	10,232
Grand total	101,272	7,560	17,200	3,440	1,875	776	162,135	10,232

[1] The salmon were taken by troll lines and the remainder of the catch by hand and set lines.

NOTE.—The catch by abalone outfits was made by fishermen from the Monterey district.

SAN FRANCISCO DISTRICT

The catch in this district amounted to 52,551,605 pounds, valued at $2,013,430. Considered according to quantity, the more important species comprising this catch were pilchard or sardine, 18,741,812 pounds, valued at $116,580; flounders, 10,146,382 pounds, valued at $465,274; cod, which were taken by California fishermen in Alaska waters, 2,746,880 pounds, valued at $186,644; crabs, 2,539,320 pounds, valued at $190,449; salmon, 2,409,532 pounds, valued at $237,058; and shrimp, 1,697,365 pounds, valued at $28,007.

Operating units.—The catch of fishery products in the San Francisco district during 1927 was taken by 1,308 fishermen, 584 motor and other small boats, 4 steam vessels, 19 motor vessels, 5 sailing vessels, and 12 major type of gears. The combined capacity of the vessels amounted to 2,295 net tons.

Catch by gear.—Five types of gear accounted for 91 per cent of the fishery products taken in this district during 1927. In the order of their importance they were lampara nets, which accounted for 38

per cent of the catch; paranzella nets, 21 per cent; gill nets, 12 per cent; lines, 10 per cent; and whaling apparatus, 10 per cent. The catch by lampara nets was chiefly pilchard or sardines; that by paranzella nets principally flounders; that by gill nets chiefly shad, salmon, and striped bass; that by lines largely cod taken in Alaska waters and salmon; and that by whale apparatus exclusively whales. Statistics for whale oil only are shown, it being the only whale product marketed.

Fisheries of the San Francisco district of California, 1927

OPERATING UNITS: BY GEAR

Items	Haul seines	Lampara nets (sardine)	Paranzella nets	Troll lines	Trawl and hand lines	Gill nets				
						Drift (salmon)	Sea bass	Shad	Striped bass	Other
Fishermen:										
On vessels			66	4	192					
On boats and shore	6	115		316	195	574	8	415	276	38
Total	6	115	66	320	387	574	8	415	276	38
Vessels:										
Motor			16	2	1					
Net tonnage			250	16	10					
Sail					5					
Net tonnage					1,782					
Total vessels			16	2	6					
Total net tonnage			250	16	1,792					
Boats:										
Motor	2	24		288	178	303	5	257	172	31
Other						4		4	4	
Apparatus:										
Number	2	24	9	1,160	877	307	5	261	176	31
Length, yards	360	2,880								
Square yards						753,685	12,400	620,136	373,824	32,395
Yards at mouth			150							
Hooks				5,798	117,194					

Items	Fyke nets	Beam trawls	Crab traps	Shovels and rakes	Tongs	Whaling apparatus	Total, exclusive of duplication
Fishermen:							
On vessels		2				44	305
On boats and shore	55	29	246	17	6		1,003
Total	55	31	246	17	6	44	1,038
Vessels:							
Steam						4	4
Net tonnage						241	241
Motor		1					19
Net tonnage		6					272
Sail							5
Net tonnage							1,782
Total vessels		1				4	28
Total net tonnage		6				241	2,295
Boats:							
Motor	39	20	246		2		566
Other	9				6		18
Apparatus:							
Number	816	21	4,920	17	6	4	
Yards at mouth		126					

Fisheries of the San Francisco district of California, 1927—Continued

CATCH: BY GEAR

Species	Haul seines		Lampara nets		Paranzella nets		Lines [1]	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Anchovies			278,125	$2,781				
Carp	1,306	$39						
Cod, dry salted							[2] 2,746,880	$186,644
Eels							5	1
Flounders:								
"Sole"					8,975,232	$403,885	12,448	622
Other			837	42	1,149,127	60,529	45	3
Grayfish					184,687	3,694	2,757	55
Hake					69,774	1,744	6,177	185
Halibut					9,734	1,071	3,063	459
Hardhead	16,009	1,441						
Herring			938,202	18,764				
Kingfish			4,809	289	42,712	2,136		
"Lingcod"					131,711	5,268	197,645	8,894
Mackerel			138	6				
Perch			34,468	1,206	3,120	94		
Pilchard or sardine			18,741,812	116,580				
Rockfishes					379,199	15,168	522,612	20,904
Sablefish					62,067	2,793	341,730	17,087
Salmon							1,492,162	153,898
Skates					221,928	4,438		
Smelt			31,729	2,538				
Splittail	2,712	163						
Squawfish	55	5						
Tomcod					690	21		
Whitebait			28,365	3,120				
Other fish					21,370	748	1,768	71
Total	20,082	1,648	20,058,485	145,326	11,251,351	501,589	5,327,292	388,823
SHELLFISH, ETC.								
Crabs					16,600	1,245		
Octopus					75	8	3,314	354
Total					16,675	1,253	3,314	354
Grand total	20,082	1,648	20,058,485	145,326	11,268,026	502,842	5,330,606	389,177

Species	Gill nets		Fyke nets		Beam trawls		Traps	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Carp	33,359	$834	22,852	$549				
Catfish	7,634	1,298	284,517	42,678				
Flounders	8,693	193						
Hardhead			16,889	1,397				
Herring	160,358	3,207						
Perch	59,134	2,366						
Salmon	917,370	83,160						
Sea bass, white, or squeteague	23,956	2,995						
Shad	4,103,423	148,201						
Smelt	91,901	8,271						
Splittail			7,889	473				
Squawfish	6,044	483	1,766	141				
Striped bass	647,594	92,036						
Suckers			1,020	20				
Whitebait	2,610	365						
Other fish	2,523	177						
Total	6,064,599	343,586	334,933	45,258				
SHELLFISH, ETC.								
Crabs							2,522,720	$189,204
Shrimp					1,697,365	$28,007		
Total					1,697,365	28,007	2,522,720	189,204
Grand total	6,064,599	343,586	334,933	45,258	1,697,365	28,007	2,522,720	189,204

[1] The salmon were taken by troll lines and the remainder by set or hand lines.
[2] The catch of cod was made in Alaska waters.

Fisheries of the San Francisco district of California, 1927—Continued

CATCH: BY GEAR—Continued

Species	Tongs		Shovels and rakes		Whaling apparatus	
SHELLFISH, ETC.						
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Clams:						
Cockle			615	$528		
Soft			25,231	12,975		
Mixed			7,102	4,058		
Mussels			419	64		
Oysters, Eastern market	55,492	$23,782				
Total	55,492	23,782	33,367	17,625		
WHALE PRODUCTS						
Whale oil					5,165,930	$326,975
Grand total	55,492	23,782	33,367	17,625	5,165,930	326,975

MONTEREY DISTRICT

The catch in the Monterey district amounted to 186,350,813 pounds, valued at $1,352,768. By far the most important species contributing to this catch were pilchard or sardine, the catch of which amounted to 173,956,587 pounds, valued at $877,021. Other important species were squid, 5,985,482 pounds, valued at $54,288; rockfishes, 1,798,298 pounds, valued at $71,219; flounders, 1,077,190 pounds, valued at $54,017; and mackerel, 1,040,245 pounds, valued at $31,776. The catch of other species individually amounted to less than 1,000,000 pounds.

Operating units.—The catch of fishery products in the Monterey districts during 1927 was taken by 1,170 fishermen, 341 motor and other small boats, 6 motor vessels, and 9 major types of gear. The combined capacity of the vessels amounted to 74 net tons.

Catch by gear.—Three types of gear accounted for 98 per cent of the fishery products taken in this district during 1927. In the order of their importance they were lampara nets, which accounted for 94 per cent of the catch, and purse seines and lines, each of which accounted for 2 per cent of the catch. The catch by lampara nets and purse seines consisted almost exclusively of pilchard or sardine, and that by lines was principally rockfishes, mackerel, and salmon.

Fisheries of the Monterey district of California, 1927

OPERATING UNITS: BY GEAR

Items	Purse seines (sardine)	Lampara nets		Troll lines	Trawl and hand lines
		Sardine	Squid		
Fishermen:					
On vessels	17	22	10		
On boats and shore		789	281	242	254
Total	17	811	291	242	254
Vessels, motor	2	2	2		
Net tonnage	45	17	17		
Boats:					
Motor		71	53	228	232
Other					6
Apparatus:					
Number	2	73	55	456	1,007
Length, yards	620	23,908	12,958		
Hooks				2,736	126,325

Fisheries of the Monterey district of California—Continued

OPERATING UNITS: By gear—Continued

Items	Gill nets			Traps		Rakes	Abalone outfits	Total, exclusive of duplication
	Barracuda	Sea bass	Other	Crab	Octopus			
Fishermen:								
On vessels							10	49
On boats and shore	1	53	105	4	10	8	45	1,121
Total	1	53	105	4	10	8	55	1,170
Vessels, motor							2	6
Net tonnage							12	74
Boats:								
Motor	1	34	72	4	7	2	9	331
Other						6		10
Apparatus:								
Number	1	34	72	40	31	8	11	
Square yards	3,200	119,893	200,576					

NOTE.—Paranzella nets also were operated in this district by fishermen from the San Francisco district.

CATCH: By gear

Species	Purse seines		Lampara nets		Paranzella nets		Lines [1]	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore							1,051	$158
Anchovies			56,600	$529				
Barracuda			50	6				
Bonito			1,906	114				
Flounders:								
"California halibut"			442	66	5,710	$753	4,425	607
"Sole"					836,189	41,809	34,122	1,672
Other					190,157	8,842	6,145	268
Grayfish					10,400	52		
Hake					8,602	215		
Herring			2,530	80				
Horse mackerel			41,497	1,338			14,591	1,004
Kingfish			53,444	2,982	20,835	1,146	2,442	146
"Lingcod"					15,467	695	144,510	6,601
Mackerel	700	$5	83,939	2,959			955,606	28,812
Perch			5,614	195	7,800	234	26,767	1,011
Pilchard or sardine	4,477,545	24,626	169,479,042	852,395				
Pompano			177	108				
Rockfishes			1,190	58	13,940	558	1,783,168	70,603
Sablefish					3,575	179	190,314	9,592
Salmon							717,027	86,961
Sculpin							752	22
Sea bass, white, or squeteague			4,494	567			296	39
Skates					16,915	254	4,137	76
Smelt			25,849	2,042			1,668	130
Whitebait			1,757	140				
Other fish			3,130	158	250	8	13,809	443
Total	4,478,245	24,631	169,761,661	863,737	1,129,840	54,745	3,900,830	208,145
SHELLFISH, ETC.								
Octopus							2,435	250
Squid			5,985,482	54,288				
Total			5,985,482	54,288			2,435	250
Grand total	4,478,245	24,631	175,747,143	918,025	1,129,840	54,745	3,903,265	208,395

[1] Of the line catch, albacore and salmon were taken by troll lines and the remainder by set and hand lines.

NOTE.—The catch by paranzella nets was made by fishermen from the San Francisco district.

Fisheries of the Monterey district of California—Continued

CATCH: By GEAR—Continued

Species	Gill nets		Traps		Rakes		Abalone outfits	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Barracuda	2,594	$260						
Bonito	1,771	54						
Herring	450	9						
Kingfish	56,900	2,772						
Sea bass:								
Black	100	4						
White, or squeteague	42,721	4,724						
Skipjack or striped tuna	1,051	52						
Smelt	152,247	9,835						
White bait	145	13						
Total	257,979	17,723						
SHELLFISH, ETC.								
Crabs	257,736	17,182	1,584	$106				
Abalone							542,489	$108,498
Mussels					2,533	$329		
Octopus			29,999	3,134				
Total	257,736	17,182	31,583	3,240	2,533	329	542,489	108,498
Grand total	515,715	34,905	31,583	3,240	2,533	329	542,489	108,498

SOUTHERN DISTRICT

The combined catch in the San Pedro and San Diego sections, which comprise the southern district, amounted to 247,123,307 pounds, valued at $6,236,377. This includes the catch off the coast of California and that off the coast of Mexico. Considered according to quantity, the more important species contributing to this catch were pilchard or sardine, 149,576,722 pounds, valued at $833,179; skipjack or striped tuna, 33,805,960 pounds, valued at $1,260,795; and yellowfin tuna, 25,933,966 pounds, valued at $1,304,002.

The operating units and catch of the principal species are discussed for each section individually in the following paragraphs.

SAN PEDRO SECTION

Operating units.—The catch of fishery products in the San Pedro section was taken by 3,053 fishermen, 755 motor and other small boats, 249 motor vessels, and 11 major types of gear. The combined capacity of the vessels amounted to 3,980 net tons.

Off California.—That part of the catch in this section taken off the California coast amounted to 171,632,995 pounds, valued at $2,677,150. Considered according to quantity, the more important species were pilchard or sardine, 143,548,925 pounds, valued at $789,520; skipjack or striped tuna 4,791,589 pounds, valued at $204,239; bluefin tuna, 4,362,235 pounds, valued at $281,696; albacore, 3,719,880 pounds, valued at $425,108; barracuda, 3,518,483 pounds, valued at $283,721; mackerel, 3,131,462 pounds, valued at $77,778; and rockfishes, 2,395,717 pounds, valued at $126,801.

Catch by gear.—Four types of gear accounted for 98 per cent of the fishery products taken in this division during 1927. In the order of their importance they were purse seines, which accounted for 49 per cent of the catch; lampara nets, 40 per cent; troll lines, 6 per cent; and set and hand lines, 3 per cent. The catch by purse seines

and lampara nets was principally pilchard or sardine, although bluefin tuna and barracuda were important in the catch made by purse seines. The catch by troll lines was principally skipjack or striped tuna and albacore, and that by set and hand lines chiefly rockfishes and mackerel.

Off Mexico.—That part of the catch in the San Pedro section taken off the coast of Mexico amounted to 30,447,551 pounds, valued at $1,410,746. Considered according to quantity, the more important species were skipjack or striped tuna, 13,321,014 pounds, valued at $445,961; yellowfin tuna, 12,783,271 pounds, valued at $604,185; barracuda, 1,569,186 pounds, valued at $211,326; and yellowtail, 1,239,508 pounds, valued at $45,809.

Catch by gear.—Two types of gear accounted for 97 per cent of the fishery products taken in this division during 1927. By far the more important of these gears were troll lines, which accounted for 85 per cent of the catch. Purse seines accounted for 12 per cent. The catch by purse seines was principally skipjack or striped tuna and yellowfin tuna, and that by purse seines was chiefly barracuda and yellowfin tuna.

Fisheries of the San Pedro section of the southern district of California, 1927

OPERATING UNITS: BY GEAR

Items	Purse seines			Haul seines	Lampara nets (sardine)	Paranzella nets	Troll lines	Set and hand lines
	Barracuda	Sardine	Tuna					
Fishermen:								
On vessels	225	640	320		575	6	708	133
On boats and shore				3	99	15	1,091	491
Total	225	640	320	3	674	21	1,799	624
Vessels, motor	25	71	35		70	2	157	37
Net tonnage	676	1,974	929		774	16	1,736	407
Boats:								
Motor				1	22	6	641	257
Other								27
Apparatus:								
Number	25	71	35	1	92	4	5,301	1,345
Length, yards	11,075	27,382	18,424	100	36,860			
Yards at mouth						60		
Hooks							5,301	300,436

Items	Gill nets			Trammel nets	Lobster traps	Harpoons, (swordfish)	Shovels	Abalone outfits	Total, exclusive of duplication
	Barracuda	Sea bass	Other						
Fishermen:									
On vessels	44	13		40	36	6			1,699
On boats and shore	119	73	9	81	237	10	78	5	1,354
Total	163	86	9	121	273	16	78	5	3,053
Vessels, motor	14	4		13	12	2			249
Net tonnage	94	21		89	86	40			3,980
Boats:									
Motor	42	25	6	29	113	5			716
Other			1		10			3	39
Apparatus:									
Number	54	29	7	42	3,370	7	78	5	
Square yards	466,312	150,280	8,000	238,700					

Fisheries of the San Pedro section of the southern district of California, 1927—Con.

CATCH OFF CALIFORNIA: BY GEAR

Species	Purse seines		Haul seines		Lampara nets		Paranzella nets	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Anchovies	2,095	$42			30,031	$533		
Barracuda	1,087,452	111,138			188,245	13,748		
Bonito	475,018	14,507			32,808	889		
Carp			2,601	$130				
Flounders:								
"California halibut"	374	55			1,104	142	259,024	$30,267
"Sole"					110	6	206,954	9,088
Grayfish	105	1			2,130	39		
Horse mackerel	116,897	3,538			253,021	10,948		
Kingfish					327,738	6,437		
Mackerel	435,259	3,726			701,641	12,944		
Mullet					710	43		
Perch	3,689	220			46,057	3,357	546	33
Pilchard or sardine	77,582,818	426,706			65,966,107	362,814		
Pompano	79	37			3,578	1,712		
Rock bass	50,639	3,941			412	30		
Rockfishes					2,663	147		
Sculpin					420	34		
Sea bass:								
Black	6,026	214			270	12	621	19
White or squeteague	110,417	11,851			46,345	4,800		
Sheepshead	390	16			88	4		
Skates					125	3		
Skipjack or striped tuna	260,072	11,197						
Smelt	2,294	165			415,321	15,089		
Tuna:								
Bluefin	3,740,615	235,378			8,288	539		
Yellowfin	28,538	1,696						
Whitefish	180	13						
Yellowtail	291,730	18,437						
Other fish	7,440	454			17,578	1,072	334	20
Total	84,202,127	843,332	2,601	130	68,044,790	435,342	467,479	39,427
SHELLFISH, ETC.								
Sea crawfish or spiny lobster							863	146
Squid					28,329	1,416		
Total					28,329	1,416	863	146
Grand total	84,202,127	843,332	2,601	130	68,073,119	436,758	468,342	39,573

Species	Troll lines		Set and hand lines		Gill nets		Trammel nets	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore	3,719,880	$425,108						
Barracuda	431,661	29,629			1,811,125	$129,206		
Bonito	110,641	3,576	27,824	$871	77,471	1,882	6,961	$204
Flounders:								
"California halibut"			27,507	4,480	2,419	392	454,088	77,626
"Sole"			1,940	108	8	1	22,507	1,490
Other			16,113	1,149			152	8
Grayfish	1,389	28	36,223	744	26,802	503	24,213	530
Herring					542	16		
Horse mackerel	1,689	61	10,744	393	24,100	872		
Kingfish			9,673	211	5,493	122		
"Lingcod"			1,294	49				
Mackerel			1,523,685	46,274	460,920	14,657	9,957	177
Mullet					5,705	513		
Perch			11,598	887	11,137	881	341	23
Pompano					101	47		
Rock bass	892	68	267,274	18,953	13,775	1,125	289	20
Rockfishes			2,392,433	126,622	263	14	358	18
Sablefish			1,994	100				
Salmon	21	3						
Sculpin			74,239	6,732	419	39	326	25
Sea bass:								
Black			51,587	2,853	3,956	166	2,601	121
White, or squeteague			135,705	14,970	259,392	31,801	8,661	773
Sheepshead			88,965	3,558	2,540	80	3,478	119
Skates			1,361	32	2,756	55	15,128	322
Skipjack or striped tuna	4,531,517	193,042						
Smelt			9,836	604	177,099	13,006		
Swordfish	554	19						

Fisheries of the San Pedro section of the southern district of California, 1927—Con.

CATCH OFF CALIFORNIA: BY GEAR—Continued

Species	Troll lines		Set and hand lines		Gill nets		Trammel nets	
FISH—continued								
Tuna:	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bluefin	613, 332	$45, 779						
Yellowfin	521, 461	32, 655						
Whitefish			202, 056	$21, 309	107	$7	55	$4
Yellowtail	87, 091	3, 462			24, 963	1, 566	12	1
Other fish	24, 989	1, 121	72, 312	3, 423	2, 935	225	1, 224	47
Total	10, 045, 127	734, 551	4, 964, 363	254, 322	2, 914, 028	197, 176	550, 351	81, 508
SHELLFISH, ETC.								
Octopus			351	49				
Grand total	10, 045, 127	734, 551	4, 964, 714	254, 371	2, 914, 028	197, 176	550, 351	81, 508

Species	Traps		Harpoons		Rakes and shovels		Abalone outfits	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Rock bass	3, 148	$274						
Sheepshead	17, 292	692						
Swordfish			9, 652	$685				
Total	20, 440	966	9, 652	685				
SHELLFISH, ETC.								
Sea crawfish or spiny lobster	345, 558	71, 752						
Abalone							3, 617	$884
Clams:								
Pismo					33, 250	$15, 441		
Mixed					58	22		
Mussels					11	1		
Total	345, 558	71, 752			33, 319	15, 464	3, 617	884
Grand total	365, 998	72, 718	9, 652	685	33, 319	15, 464	3, 617	884

CATCH OFF MEXICO: BY GEAR

Species	Purse seines		Lampara nets		Troll lines		Set and hand lines		Shovels	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore					23, 073	$2, 423				
Barracuda	1, 567, 291	$211, 091	434	$59	1, 461	176				
Bonito	178, 528	5, 941			382, 710	10, 888				
Flounders, "California halibut"	384	61	263	41			822	$132		
Horse mackerel	2, 166	104	1, 945	195			726	36		
Mackerel			308	3						
Mullet			9, 074	925						
Perch	205	14	6, 784	505						
Pompano							33, 247	2, 519		
Rock bass	163	13					4, 509	410		
Rockfishes			472	25			587	41		
Sea bass:										
Black	13, 333	667			100	5	1, 012	46		
White, or sque-teague	45, 836	7, 396	9, 634	1, 377			791, 632	67, 392		
Skipjack or striped tuna	153, 980	4, 234			13, 167, 034	441, 727				
Tuna, yellowfin	1, 492, 802	58, 855			11, 290, 469	545, 330				
Whitefish	2, 231	203					7, 647	533		
Yellowtail	197, 647	16, 049			1, 041, 861	29, 760				
Other fish	2, 095	168	12, 005	982	2, 243	179				
Total	3, 656, 661	304, 801	40, 919	4, 112	25, 908, 951	1, 030, 488	840, 182	71, 109		
SHELLFISH, ETC.										
Clams, mixed									838	$236
Grand total	3, 656, 661	304, 801	40, 919	4, 112	25, 908, 951	1, 030, 488	840, 182	71, 109	838	236

SAN DIEGO SECTION

Operating units.—The catch of fishery products in the San Diego section was taken by 784 fishermen, 183 motor boats, 108 motor vessels, and 6 major types of gear. The combined capacity of the vessels amounted to 1,459 net tons.

Off California.—That part of the catch in the San Diego section taken off the California coast amounted to 13,362,571 pounds, valued at $478,989. Considered according to quantity, the more important species were pilchard or sardine, the catch of which amounted to 6,027,797 pounds, valued at $43,659; rockfishes, 1,149,151 pounds, valued at $54,923; yellowtail, 1,031,660 pounds, valued at $49,162; and skipjack or striped tuna, 1,011,009 pounds, valued at $42,963.

Catch by gear.—Four types of gear accounted for 93 per cent of the fishery products taken in this division during 1927. In the order of their importance they were lampara nets, which accounted for 45 per cent of the catch; troll lines, 28 per cent; set and hand lines, 15 per cent; and purse seines, 5 per cent. The catch by lampara nets was made up chiefly of pilchard or sardine; that by troll lines principally of skipjack or striped tuna, yellowtail, and albacore; that by set and hand lines principally of rockfishes and mackerel; and that by purse seines was almost exclusively bluefin tuna.

Off Mexico.—That part of the catch in the San Diego section taken off the coast of Mexico amounted to 31,680,190 pounds, valued at $1,669,492. Considered according to quantity, the more important species were skipjack or striped tuna, 14,682,348 pounds, valued at $507,632; yellowfin tuna, 12,555,448 pounds, valued at $662,751; and yellowtail, 1,549,889 pounds, valued at $77,026.

Catch by gear.—Three types of gear accounted for 95 per cent of the catch in this division. By far the most important of these gears were troll lines, which accounted for 84 per cent of the catch. Purse seines accounted for 8 per cent and traps for 3 per cent of the catch. The catch by troll lines was principally skipjack or striped tuna and yellowfin tuna, that by purse seines largely yellowfin tuna, and that by traps almost exclusively sea crawfish or spiny lobsters.

Fisheries of the San Diego section of the southern district of California, 1927

OPERATING UNITS: BY GEAR

Items	Lampara nets (sardines)	Troll lines	Set and hand lines	Gill nets			Trammel nets	Lobster traps	Harpoons (swordfish)	Total, exclusive of duplication
				Barracuda	Sea bass	Other				
Fishermen:										
On vessels	145	480	171	31	28	4	30	55	9	491
On boats and shore	71	272	142	46	37	13	29	135	15	293
Total	216	752	313	77	65	17	59	190	24	784
Vessels, motor	30	105	38	10	8	1	9	15	2	108
Net tonnage	309	1,435	611	75	62	15	70	153	20	1,459
Boats, motor	20	159	71	18	14	10	10	70	6	183
Apparatus:										
Number	50	1,700	718	28	22	11	19	2,540	8	-------
Length, yards	9,610	-------	-------	-------	-------	-------	-------	-------	-------	-------
Square yards	-------	-------	-------	190,210	116,830	14,246	327,350	-------	-------	-------
Hooks	-------	1,700	109,422	-------	-------	-------	-------	-------	-------	-------

NOTE.—Purse seines fished for tuna also were operated in this district by fishermen from the San Pedro section

Fisheries of the San Diego section of the southern district of California, 1921—Con.

CATCH OFF CALIFORNIA: BY GEAR

Species	Purse seines		Lampara nets		Troll lines		Set and hand lines	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore					734,441	$78,923		
Anchovies			1,350	$24				
Barracuda	324	$22			598,351	45,335	861	$89
Bonito					371,527	9,740		
Flounders:								
"California halibut"							2,115	280
"Sole"							3,734	441
Grayfish							11,627	53
Kingfish			4,522	100			662	23
Mackerel	5,350	134	16,910	134	1,533	25	482,215	10,264
Perch			250	9				
Pilchard or sardine			6,027,797	43,659				
Pompano			790	225				
Rock bass					4,469	241	133,543	8,985
Rockfishes							1,147,720	54,861
Sculpin							38,053	3,104
Sea bass:								
Black					4,813	246	105,134	4,228
White, or squeteague			4,216	276			30,887	3,674
Sheepshead			163	5			9,100	286
Skipjack or striped tuna					1,011,069	42,963		
Smelt			13,549	838			2,116	162
Tuna:								
Bluefin	535,669	29,789			482	27		
Yellowfin					45,248	2,715		
Whitefish							85,046	4,633
Yellowtail	60,317	3,638			957,815	44,952		
Total	601,660	33,583	6,069,547	45,270	3,729,688	225,167	2,052,813	91,083
SHELLFISH, ETC.								
Squid			302	30				
Grand total	601,660	33,583	6,069,849	45,300	3,729,688	225,167	2,052,813	91,083

Species	Gill nets		Trammel nets		Traps		Harpoons	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Barracuda	234,920	$17,388						
Bonito	14,498	358						
Flounders:								
"California halibut"			60,033	$8,303				
"Sole"			25	2				
Grayfish			24,560	123				
Herring	15,945	380						
Kingfish	37	1						
Mackerel	51,050	812						
Mullet	7,171	772						
Perch	1,543	68						
Rock bass	4,063	254			7,278	$437		
Rockfishes			1,431	62				
Sea bass:								
Black	344	17	7,274	437				
White, or squeteague	139,469	13,045						
Sheepshead	692	24			36,079	1,479		
Smelt	6,687	498						
Swordfish							120,082	$11,583
Whitefish	150	10						
Yellowtail	13,528	572						
Total	490,097	34,199	93,323	8,927	43,357	1,916	120,082	11,583
SHELLFISH, ETC.								
Sea crawfish or spiny lobster					161,702	27,231		
Grand total	490,097	34,199	93,323	8,927	205,059	29,147	120,082	11,583

NOTE.—The catch by purse seines was made by fishermen from the San Pedro section.

Fisheries of the San Diego section of the southern district of California, 1927—Con.

CATCH OFF MEXICO: BY GEAR

Species	Purse seines		Lampara nets		Troll lines		Set and hand lines	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Albacore					100,922	$10,742		
Barracuda	76,501	$11,222	130	$17	105,008	14,843		
Bonito	5,688	171	330	13	23,903	628		
Flounders:								
"California halibut"							100	$3
"Sole"							22	2
Mackerel			2,343	247			1,770	44
Mullet			15,464	1,382				
Perch			775	37				
Pompano			17,155	1,760				
Rock bass			4,160	337	373	19	25,578	1,577
Rockfishes							5,977	343
Sea bass:								
Black	197	11	8,934	317	26,838	1,065	206,087	9,068
White, or squeteague	75	12	7,752	1,318			333,801	19,820
Skipjack, or striped tuna	139,582	3,839			14,542,766	563,793		
Smelt			40	3				
Tuna:								
Bluefin					79	5		
Yellowfin	2,212,312	78,803			10,343,136	583,948		
Whitefish	140	3	610	18			13,945	746
Yellowtail	39,200	3,942	7,083	798	1,484,255	70,986		
Other fish			1,482	90	1,290	65	16,144	1,028
Total	2,473,695	93,003	66,238	6,337	26,628,570	1,246,094	603,424	32,631

Species	Gill nets		Trammel nets		Traps	
FISH	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Barracuda	93,331	$11,768				
Bonito	5,373	161				
Flounders, "California halibut"			483,473	$64,060		
Mackerel	7,225	162	90	4		
Mullet	1,852	152				
Rock bass	119	12	5,076	253	80	$6
Rockfishes			820	30		
Sea bass:						
Black	883	52	27,485	1,239		
White, or squeteague	277,830	30,869	288	45		
Sheepshead					610	19
Smelt	280	20				
Whitefish			935	37		
Yellowtail	19,371	1,300				
Other fish	307	16				
Total	406,571	44,512	518,167	65,668	690	25
SHELLFISH, ETC.						
Sea crawfish, or spiny lobster					982,835	176,222
Grand total	406,571	44,512	518,167	65,668	983,525	176,247

PACIFIC HALIBUT [8]

AMERICAN AND CANADIAN FISHERIES

The halibut fishery of the Pacific coast, which is prosecuted by American and Canadian vessels, ranks as one of the foremost fisheries of that section. In 1928 the total weight of the catch landed

[8] To preclude the possibility of unwarranted comparison of figures given in this section with others for years previous to 1927, it should be explained that the figures as herein compiled differ from those published in separate reports for the Alaska fisheries and the Pacific Coast States. The difference lies principally in the fleet classifications as between Washington and Alaska, though there is reason to believe that the figures on landings also are not comparable with those previously published, due to variable practice in the inclusion of American-caught halibut landed at foreign ports as well as the possible duplication of figures.

The present compilation is a complete résumé of the landings of the American fleet for the year 1928 at all Pacific ports except those in Oregon and California, without omission or duplication. The fleet classification has been applied arbitrarily by including in the "Washington fleet" all vessels that land more than half of their catch in that State. All others were included in the "Alaska fleet." It has been necessary, in some cases, to use "hailing fares"; the error therefrom is estimated to be less than 2 per cent.

by vessels of both nationalities amounted to 54,915,000 pounds, valued at $5,673,000. This is virtually the same as the amount of the catch in 1927 and but little more than that for 1925 and 1926. Of this amount, 79 per cent was taken by American craft and 21 per cent by Canadian craft. Of the total catch, 57 per cent was landed in British Columbia. Due to Prince Rupert, British Columbia, having excellent rail facilities with western points of Canada and the United States, and being in close proximity to the fishing grounds, the majority of the British Columbia landings were made there. The rest of them were made at Vancouver and Victoria, British Columbia. Twenty-five per cent of the total catch was landed at ports in the State of Washington and 18 per cent at ports in Alaska.

AMERICAN FISHERY

Operating units.—The American halibut fleet numbered 226 vessels that fished regularly for halibut; their total tonnage was 5,657, they were manned by 1,696 fishermen, and operated 9,560 skates of lines. In addition to the regular vessels, 56 other vessels and 181 boats landed halibut at times. These used 2,960 skates of lines.

Catch.—The total weight of the catch as landed by all American craft fishing for halibut amounted to 47,507,419 pounds, valued at $4,645,617. Of this amount, 92 per cent consisted of halibut, 5 per cent of sablefish, 2 per cent of "lingcod," and 1 per cent of rockfishes. The regular halibut vessels made 93 per cent of the total catch, while the casual vessels and boats in this fishery caught the rest, or 7 per cent.

Halibut fishery of the Pacific coast, 1928

AMERICAN OPERATING UNITS: BY FLEET CLASSIFICATION

Items	Washington fleet	Alaska fleet	Total
Regular halibut vessels:			
Number	81	145	226
Net tonnage	1,922	3,735	5,657
Crew	580	1,116	1,696
Dories	81	145	226
Skates of lines	3,550	6,010	9,560
Vessels in other fisheries but landing one or more fares of halibut:			
Number	26	30	56
Net tonnage	401	446	847
Crew	137	114	251
Dories	19	22	41
Skates of lines	960	610	1,570
Regular halibut boats:			
Number		30	30
Crew		60	60
Skates of lines		450	450
Boats in other fisheries but landing one or more fares of halibut:			
Number	2	149	151
Crew	4	212	216
Skates of lines	40	900	940

Halibut fisheries of the Pacific coast, 1928—Continued

CATCH OF ALL SPECIES: BY AMERICAN VESSELS AND BOATS

Fleet classification	Landed in—						Total	
	Washington		British Columbia		Alaska			
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
WASHINGTON FLEET								
Regular vessels:								
Halibut	9,316,825	$1,113,068	1,265,200	$142,580	370,665	$26,771	10,952,690	$1,282,419
Sablefish	2,209,400	104,505	5,000	200	8,363	369	2,222,763	105,075
"Lingcod"	719,750	26,941			17	1	719,767	26,942
Rockfishes	522,725	18,144			151	4	522,876	18,148
Total	12,768,700	1,262,659	1,270,200	142,780	379,196	27,145	14,418,096	1,432,584
Other vessels and boats:								
Halibut	889,550	92,394	31,500	2,828	8,754	884	929,804	96,106
Sablefish	112,400	5,450					112,400	5,450
"Lingcod"	191,200	6,640					191,200	6,640
Rockfishes	53,600	1,906					53,600	1,906
Total	1,246,750	106,390	31,500	2,828	8,754	884	1,287,004	110,102
ALASKA FLEET								
Regular vessels:								
Halibut	3,527,400	392,720	18,181,800	1,923,443	8,081,516	627,552	29,790,716	2,943,715
Sablefish	32,400	1,500	49,500	2,110	79,414	2,877	161,314	6,487
"Lingcod"	17,900	716					17,900	716
Rockfishes	14,100	570			371	6	14,471	576
Total	3,591,800	395,506	18,231,300	1,925,553	8,161,301	630,435	29,984,401	2,951,494
Other vessels and boats:								
Halibut	19,000	2,661	484,400	49,971	1,272,547	97,237	1,775,947	149,869
Sablefish	1,000	30	4,000	160	27,650	1,125	32,650	1,315
"Lingcod"					1,214	20	1,214	20
Rockfishes	800	24			7,307	209	8,107	233
Total	20,800	2,715	488,400	50,131	1,308,718	98,591	1,817,918	151,437
BOTH FLEETS								
Regular vessels:								
Halibut	12,844,225	1,505,788	19,447,000	2,066,023	8,452,181	654,323	40,743,406	4,226,134
Sablefish	2,241,800	106,006	54,500	2,310	87,777	3,246	2,384,077	111,562
"Lingcod"	737,650	27,657			17	1	737,667	27,658
Rockfishes	536,825	18,714			522	10	537,347	18,724
Total	16,360,500	1,658,165	19,501,500	2,068,333	8,540,497	657,580	44,402,497	4,384,078
Other vessels and boats:								
Halibut	908,550	95,055	515,900	52,799	1,281,301	98,121	2,705,751	245,975
Sablefish	113,400	5,480	4,000	160	27,650	1,125	145,050	6,765
"Lingcod"	191,200	6,640			1,214	20	192,414	6,660
Rockfishes	54,400	1,930			7,307	209	61,707	2,139
Total	1,267,550	109,105	519,900	52,959	1,317,472	99,475	3,104,922	261,539
All vessels and boats:								
Halibut	13,752,775	1,600,843	19,962,900	2,118,822	9,733,482	752,444	43,449,157	4,472,109
Sablefish	2,355,200	111,486	58,500	2,470	115,427	4,371	2,529,127	118,327
"Lingcod"	928,850	34,297			1,231	21	930,081	34,318
Rockfishes	591,225	20,644			7,829	219	599,054	20,863
Grand total	17,628,050	1,767,270	20,021,400	2,121,292	9,857,969	757,055	47,507,419	4,645,617

NOTE.—Weight of the catch is shown as landed.

Halibut fisheries of the Pacific coast, 1928—Continued

CATCH OF HALIBUT: BY AMERICAN AND CANADIAN VESSELS AND BOATS

[Expressed in thousands of pounds and thousands of dollars; that is 000 omitted]

Fleet classification	Landed in—						Total	
	Washington		British Columbia		Alaska			
	Quantity	*Value*	*Quantity*	*Value*	*Quantity*	*Value*	*Quantity*	*Value*
WASHINGTON FLEET								
Regular halibut vessels	9,317	1,113	1,265	143	370	26	10,952	1,282
Other vessels and boats	890	92	32	3	8	1	930	96
Total	10,207	1,205	1,297	146	378	27	11,882	1,378
ALASKA FLEET								
Regular halibut vessels	3,527	393	18,182	1,923	8,082	628	29,791	2,944
Other vessels and boats	19	3	484	50	1,273	97	1,776	150
Total	3,546	396	18,666	1,973	9,355	725	31,567	3,094
COMBINED FLEET								
Regular halibut vessels	12,844	1,506	19,447	2,066	8,452	654	40,743	4,226
Other vessels and boats	909	95	516	53	1,281	98	2,706	246
Total	13,753	1,601	19,963	2,119	9,733	752	43,449	4,472
British Columbia fleet			11,396	[1] 1,197	70	4	11,466	1,201
Grand total	13,753	1,601	31,359	3,316	9,803	756	54,915	5,673

[1] Estimated.

NOTE.—Weight of the catch is shown as landed.

Halibut fishery of the Pacific coast, 1925–1928

CATCH OF HALIBUT: BY AMERICAN AND CANADIAN VESSELS AND BOATS

[Expressed in thousands of pounds; that is, 000 omitted]

Year	Landed in—							Total		Grand total
	Washington	British Columbia [1]			Alaska					
	By American vessels	By American vessels	By Canadian vessels	Total	By American vessels	By Canadian vessels	Total	By American vessels	By Canadian vessels	
1925	9,685	22,390	7,731	30,121	10,038	------	10,038	42,113	7,731	49,844
1926	10,050	20,231	9,277	29,608	14,122	------	14,122	44,503	9,277	53,780
1927	11,789	18,258	10,076	28,334	15,052	------	15,052	45,099	10,076	55,175
1928	13,753	19,963	11,396	31,359	9,733	70	9,803	43,449	11,466	54,915

[1] Statistics furnished by American Consular Service and the Seattle and Prince Rupert Halibut Exchanges.

VESSEL FISHERIES AT SEATTLE, WASH.

During 1928 fishing vessels of 5 net tons and over and collecting vessels landed 33,773,388 pounds of fishery products at Seattle, valued at $3,147,362. This is an increase over the previous year of 7 per cent in the amount and a decrease of 3 per cent in value. The decrease in value was due mainly to the lesser value of the halibut landed.

The fishing vessels in 1928 made 1,165 trips and landed 17,547,015 pounds of fish, valued at $1,755,959. This is an increase of 94 trips and 12 per cent in amount, compared with the previous year, but a decrease of 13 per cent in the value. Halibut was the most important species taken by the fishing vessels, accounting for 78 per cent of the catch, while sablefish accounted for 13 per cent and "lingcod," rockfishes, and sturgeon the remaining 9 per cent.

The catch by fishing vessels was taken from fishing grounds along the Pacific coast from Oregon to Portlock Bank, Alaska. Hecate Straits ranked as the most important bank, 45 per cent of the catch being made there. Second in importance was Portlock Bank, which provided 28 per cent of the catch while the Flattery Banks ranked third, furnishing 20 per cent. The remainder of the catch was taken on the Oregon coast, Yakutat grounds, and along the west coast of Vancouver Island.

Most of the catch by fishing vessels was made during the eight months from March to October, inclusive, which is due mainly to the closed season on the taking of halibut from November 15 to February 15.

Collecting vessels landed 16,226,373 pounds of fishery products at Seattle in 1928, valued at $1,391,403, all of which were taken on Puget Sound. This was 3 per cent more than the landings made here the previous year by collecting vessels, and the value was 11 per cent greater. The increase in amount was due principally to the large landings of herring, while the greater value was accountable mainly to the higher value of salmon landed.

Of the total fishery products landed by collecting vessels, salmon accounted for 83 per cent, while herring, sole, crabs, smelt, steelhead trout, perch, rockfishes, flounders, "lingcod," and sturgeon, in the order of their importance, made up the remainder. Collecting vessels landed their largest fares during the months of May to November, inclusive, which is the time when salmon are in season. Landings by collecting vessels were largest during October.

Fishery products landed by American fishing vessels at Seattle, Wash., 1928

BY BANKS

Fishing grounds	Trips	Halibut		Sablefish		"Lingcod"	
	Number	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Oregon coast	46	214,200	$29,982	672,500	$32,372	63,400	$2,478
Flattery Banks	396	1,428,475	192,578	1,247,650	58,658	488,400	19,771
Hecate Strait	573	6,996,720	812,439	303,900	13,226	394,120	10,530
West coast Vancouver Island	3	3,700	747	2,000	120	2,500	120
Yakutat Grounds	17	258,000	37,955	26,000	1,110	5,300	128
Portlock Bank	130	4,833,300	520,872			3,400	146
Total	1,165	13,734,395	1,594,573	2,252,050	105,486	957,120	33,173

Fishing grounds	Rockfishes		Sturgeon		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Oregon coast	25,100	$816	28,000	$1,400	1,003,200	$67,048
Flattery Banks	326,500	14,140	500	10	3,491,525	285,157
Hecate Strait	218,350	6,206	500	25	7,913,590	842,426
West coast Vancouver Island	1,500	70			9,700	1,057
Yakutat Grounds	3,000	60			292,300	39,253
Portlock Bank					4,836,700	521,018
Total	574,450	21,292	29,000	1,435	17,547,015	1,755,959

BY MONTHS

Months	Trips	Halibut		Sablefish		"Lingcod"	
	Number	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
January	11					93,500	$5,347
February	39	173,525	$23,651	63,650	$2,560	69,250	3,890
March	133	1,889,350	195,302	53,200	1,724	79,500	2,646
April	144	1,389,000	156,816	66,850	2,308	119,100	3,967
May	180	2,214,320	227,897	50,650	2,327	106,500	3,465
June	145	1,995,050	212,609	158,400	8,167	80,320	1,960
July	101	1,578,300	198,257	196,300	9,688	38,950	1,407
August	131	2,012,200	210,833	355,100	17,610	92,900	1,971
September	100	970,650	145,776	384,100	18,540	69,800	2,367
October	98	833,500	118,809	723,600	33,377	67,300	2,680
November	76	678,500	104,623	187,200	8,405	57,900	2,147
December	7			13,000	780	22,100	1,326
Total	1,165	13,734,395	1,594,573	2,252,050	105,486	957,120	33,173

Months	Rockfishes		Sturgeon		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
January	51,500	$2,810			145,000	$8,157
February	48,500	2,656			354,925	32,757
March	42,400	1,382			2,064,450	201,054
April	63,450	2,100	500	$10	1,638,900	165,201
May	86,800	2,153			2,518,270	235,842
June	44,100	1,085			2,277,870	223,821
July	19,750	652			1,833,300	210,004
August	54,600	1,154			2,514,800	231,568
September	38,500	1,353	28,000	1,400	1,491,050	169,436
October	56,550	2,461	500	25	1,681,450	157,352
November	22,600	744			946,200	115,919
December	45,700	2,742			80,800	4,848
Total	574,450	21,292	29,000	1,435	17,547,015	1,755,959

Fishery products landed by collecting vessels at Seattle, Wash., 1928 (taken in Puget Sound)

BY MONTHS

Species	January		February		March		April		May	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Herring	168,000	$840	1,200,000	$6,000	160,000	$800	18,000	$900		
Salmon:										
King or spring							240,000	24,000	1,200,000	$120,000
Coho or silver									8,000	480
Trout, steelhead			8,000	1,280			16,000	1,600	22,000	2,200
Smelt	11,500	935			3,500	460				
Perch	8,000	560	6,000	300	22,000	1,100	6,000	150	8,600	576
Rockfishes	7,500	525			8,000	480	8,000	560	6,000	420
"Lingcod"					4,000	160				
Flounders	9,000	180			4,000	160	4,000	80		
"Sole"	33,000	1,280			18,000	720	72,000	880	16,000	640
Crabs	22,000	1,500	25,080	1,710	26,400	1,800	18,400	1,260	18,040	1,230
Total	259,000	5,820	1,239,080	9,290	245,900	5,680	382,400	29,430	1,278,640	125,546

Species	June		July		August		September	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Sturgeon			640	$64	800	$160	4,800	$620
Salmon:								
Humpback or pink					12,600	756	210,000	6,300
Chum or keta	4,000	$480	8,000	800	39,200	1,586	48,000	2,100
King or spring	805,500	96,660	2,224,000	311,360	1,517,600	182,112	900,000	108,000
Coho or silver	252,300	25,230	356,850	32,120	650,400	52,032	590,000	47,200
Sockeye or red	8,500	850	12,000	1,440	39,200	4,700	42,000	4,200
Trout, steelhead	27,000	2,700	32,000	3,200	12,000	1,200	18,000	1,800
Smelt			15,000	1,730	42,000	5,880	32,000	3,200
Perch			14,000	560			6,000	420
Rockfishes	4,300	300					9,000	720
"Lingcod"	5,500	110	16,000	320	12,000	480		
Flounders	6,000	120	6,000	120	6,500	130	8,000	160
"Sole"	12,400	496	24,000	960	20,000	800	18,000	720
Total	1,125,500	126,946	2,708,490	352,674	2,352,300	249,836	1,885,800	175,440

Species	October		November		December		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Sturgeon	2,300	$230					8,540	$1,074
Herring			78,000	$780			1,624,000	9,320
Salmon:								
Humpback or pink							222,600	7,056
Chum or keta	1,406,000	56,240	640,000	32,000	293,994	$29,399	2,439,194	122,605
King or spring	122,000	12,200	30,000	3,000	27,169	2,717	7,066,269	860,049
Coho or silver	1,520,000	121,600	200,000	20,000			3,577,550	298,662
Sockeye or red							101,700	11,190
Trout, steelhead							135,000	13,980
Smelt	54,000	5,490	30,000	4,500	31,000	4,030	219,000	26,225
Perch			6,000	240	4,500	315	81,100	4,221
Rockfishes	11,000	660	10,000	600	11,000	660	74,800	4,925
"Lingcod"							37,500	1,070
Flounders	7,500	150	5,000	100			56,000	1,200
"Sole"	17,000	680	35,000	1,400	45,000	1,800	310,400	10,376
Crabs	59,400	4,050	66,000	4,500	37,400	3,400	[1] 272,720	19,450
Total	3,199,200	201,300	1,100,000	67,120	450,063	42,321	16,226,373	1,391,403

[1] 12,400 dozen.

LAKE FISHERIES

The latest complete statistical canvass made by the bureau of the American catch in the lake fisheries (Lakes Ontario, Erie, Huron, Michigan, Superior, St. Clair, Kabetogama, Namakan, and Sand Point, Lake of the Woods, and Rainy Lake) was for the year 1922. The statistics collected in this canvass are published in condensed form in Bureau of Fisheries Statistical Bulletin No. 618 and in full in the report of the division of fishery industries for 1923.

The statistics of the catch presented herewith for 1927 were obtained from the various State fisheries agencies and the Dominion of Canada report, while statistics of the operating units (fishermen, vessels, boats, and gear) actually fished in 1927 were obtained by the bureau in a personal canvass. In this latter canvass the catch, segregated as to method of taking, was not ascertained.

Statistics in the tables for the years 1913 to 1927 are for Lakes Ontario, Erie, Huron, Michigan, Superior, and Namakan, Lake of the Woods, and Rainy Lake. Those for the years 1913 to 1924 were obtained in a survey of the lake fisheries made by the United States Tariff Commission, while those for the years 1925 to 1927, inclusive, were compiled and supplemented by the bureau from State statistics. To complete the data for the various lakes there have been included statistics of the Canadian lake fisheries for the years 1913 to 1927, which were obtained from official reports of the Dominion of Canada. The statistics shown for the years 1913 to 1925 are exclusive of the production of Illinois. The disparity resulting from the noninclusion of the production of Illinois is negligible. The production of Indiana from 1913 to 1925 has been estimated. The 1926 and 1927 statistics of the fisheries of these two States were collected by the bureau, which permits of their inclusion with the statistics collected by New York, Pennsylvania, Ohio, Michigan, Wisconsin, and Minnesota.

In all cases the statistics collected are for the calendar year, except for Lake of the Woods and Rainy Lake, and Lake Namakan in Minnesota, which are for two seasons. For Lake of the Woods the seasons are from June 1 to November 1 and December 1 to April 1, and for Rainy and Namakan Lakes from May 15 to November 1 and December 1 to April 1. The catch for these two seasons, in the order named, have been combined to constitute a year. The quantity of fish taken in these lakes between January 1 and April 1 amounted to less than 3 per cent of the total catch in 1927.

UNITED STATES AND CANADA

GENERAL STATISTICS

In 1927 the total catch of the lake fisheries of the United States and Canada amounted to 111,952,531 pounds. This represents an increase of 9 per cent compared with the previous year and a decrease of 6 per cent compared with the 10-year average, 1917–1926. Of the total catch, that taken in the United States amounted to 81,326,550 pounds, valued at $6,794,891. This represents 73 per cent of the total catch of the lake fisheries. It is an increase of 8 per cent in amount compared with the previous year's catch and a decrease of 3 per cent compared with the 10-year average. The Canadian catch, which amounted to 30,625,981 pounds, shows an increase

of 11 per cent as compared with the previous year and a decrease of 14 per cent as compared with the 10-year average of the Canadian catch.

CATCH

By species.—The statistics of the catch in the United States and Canada in 1927 shows that lake herring ranked first in quantity of production among species of fish taken in the lake fisheries. The catch in 1927 amounted to 25,650,527 pounds, which is 23 per cent of the total production for all the lake fisheries. It is an increase in production of 33 per cent as compared with the previous year and 38 per cent compared with the 10-year average for this species. About 86 per cent of the herring caught in the lake fisheries are caught in the waters of the United States. Lake trout ranks second in importance, with a catch of 17,569,041 pounds. This is a decrease of 2 per cent in amount compared with the previous year but an increase of 5 per cent over the 10-year average. About 60 per cent of the trout taken are caught in the waters of the United States. Blue pike rank third in importance, with a catch of 10,410,092 pounds in 1927. This is a decrease of 16 per cent compared with the production in 1926 and an increase of 5 per cent as compared with the 10-year average. The catch of whitefish nearly equaled the catch of blue pike and ranked fourth in importance, with a catch amounting to 10,254,736 pounds in 1927. This is an increase of 3 per cent over the previous year and less than 1 per cent as compared with the 10-year average. The catch of chubs, 88 per cent of which were caught in the waters of the United States, amounted to 7,991,167 pounds This is an increase of 13 per cent over the previous year and 63 per cent over the 10-year average. The catch of yellow perch amounted to 7,722,562 pounds. This is an increase of 5 per cent over the catch in 1926 and 19 per cent when compared with the 10-year average. The catch of the cisco in Lake Erie (the only lake in which this species is taken) amounted to 4,658,939 pounds. This is an increase of 54 per cent compared with last year but is a decrease of 81 per cent compared with the 10-year average for this species. The catch of yellow pike, considered by some ichthyologists to be the same species as the blue pike, amounted to 4,578,654 pounds, showing a small increase compared with the catch of 1926 but a decrease of 3 per cent compared with the 10-year average for this species.

By lakes.—Statistics of the production in the United States and Canada in 1927, by lakes, shows that Lake Erie ranks as the most important, with a catch of 33,865,274 pounds. This is an increase of less than 1 per cent compared with the previous year and a decrease of 38 per cent compared with the 10-year average for this lake. Lake Huron ranks second in importance, the catch amounting to 24,575,270 pounds. This is an increase of 19 per cent over 1926 and 33 per cent as compared with the 10-year average. Lake Michigan ranks third, with a catch nearly equal to that for Lake Huron, or 23,680,884 pounds. This is an increase of 16 per cent in amount compared with the previous year and 9 per cent compared with the 10-year average for this lake. Lake Superior produced 20,453,162 pounds and was fourth in importance. This is an increase of 15 per cent compared with the catch in 1926 and 41 per cent compared with the

10-year average. Lake Ontario was next, with a production of 4,539,931 pounds. This is a decrease of 9 per cent compared with the catch for the previous year and 20 per cent compared with the 10-year average. The catch of Lake of the Woods, Rainy Lake, and Namakan Lake, which amounted to 4,838,010 pounds, shows a decrease of 6 per cent compared with 1926 and an increase of 11 per cent compared with the 10-year average for these lakes.

Lake fisheries of the United States and Canada, 1927

CATCH: BY LAKES

Species	Lake Ontario			Lake Erie		
	United States	Canada	Total	United States	Canada	Total
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Lake trout	41,796	713,500	755,296	8,866	200	9,066
Whitefish	165,660	1,503,300	1,668,960	624,445	748,000	699,245
Lake herring	102,347	730,800	833,147			
Chubs				1,187		1,187
Cisco				2,350,239	2,308,700	4,658,939
Sturgeon	19,221	6,310	25,531	6,434	42,512	48,946
Yellow pike	19,170	40,900	60,070	1,364,493	167,000	1,531,493
Blue pike	22,221	8,100	30,321	7,301,371	3,078,100	10,379,471
Sauger				1,167,815		1,167,815
Sucker, "mullet"	61,947		61,947	1,141,961		1,141,961
Sheepshead				4,318,443		4,318,443
Yellow perch	39,186	100,800	139,986	2,747,454	2,490,600	5,238,054
Pike (jacks)		124,400	124,400	15,420	8,400	23,820
Carp	17,639	68,500	86,139	1,698,278	197,000	1,895,278
White bass				121,124		121,124
Catfish and bullheads	41,562	107,000	148,562	557,343	42,400	599,743
Burbot	88,709		88,709	358,064		358,064
Miscellaneous	78,363	438,500	516,863	13,525	985,900	999,425
Total	697,821	3,842,110	4,539,931	23,796,462	10,068,812	33,865,274

Species	Lake Huron			Lake Michigan	Lake Superior		
	United States	Canada	Total	United States	United States	Canada	Total
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Lake trout	1,691,697	4,152,100	5,843,797	5,698,624	3,051,289	2,196,700	5,247,989
Whitefish	1,676,616	1,965,500	3,642,116	2,591,291	328,157	336,700	664,857
Lake herring	5,604,373	283,200	5,887,573	5,842,231	10,628,176	2,459,400	12,087,576
Chubs	825,486	980,600	1,806,086	4,764,769	877,933	1,200	879,133
Sturgeon	8,033	26,039	34,072	5,418	210	200	410
Yellow pike	901,401	397,000	1,298,401	59,199	24,350	78,800	103,150
Blue pike		300	300				
Sauger	26,634		26,634		12		12
Sucker, "mullet"	2,460,575		2,460,575	814,616	148,575		148,575
Sheepshead	40,342		40,342	1,960			
Yellow perch	203,542	112,700	316,242	1,969,855	14,576		14,576
Pike (jacks)	35,737	203,300	239,037	28,757	6,703	7,000	13,703
Carp	1,938,760	55,800	1,994,560	6,487		1,500	1,500
White bass					5,200		5,200
Catfish and bullheads	179,762	2,000	181,762	287			
Burbot	3,017		3,017	35,008	370		
Miscellaneous	114,756	686,000	800,756	1,862,382	216,011	70,100	286,370
Total	15,710,731	8,864,539	24,575,270	23,680,884	15,301,562	5,151,600	20,453,162

Lake fisheries of the United States and Canada, 1927—Continued

CATCH: BY LAKES—Continued

Species	Namakan Lake			Rainy Lake		
	United States	Canada	Total	United States	Canada	Total
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Lake trout					46	46
Whitefish	7,572	8,370	15,942	53,303	40,696	93,999
Chubs	51,306	9,485	60,791	69,172	383,596	452,768
Sturgeon	20	875	895	357	461	818
Yellow pike	18,331	18,975	37,306	50,676	258,189	308,865
Sucker "mullet"	235		235	10,986		10,986
Yellow perch	5,977		5,977	4,977	21,454	26,431
Pike (jacks)	33,468	4,970	38,438	57,607	234,371	291,978
Tullibees	4,000		4,000			
Miscellaneous					7,040	7,040
Total	120,909	42,675	163,584	247,078	945,853	1,192,931

Species	Lake of the Woods			Total all lakes		
	United States	Canada	Total	United States	Canada	Total
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Lake trout	87	14,136	14,223	10,492,359	7,076,682	17,569,041
Whitefish	15,884	189,242	205,126	5,462,928	4,791,808	10,254,736
Lake herring				22,177,127	3,473,400	25,650,527
Chubs	26,433		26,433	6,616,286	1,374,881	7,991,167
Cisco				2,350,239	2,308,700	4,658,939
Sturgeon	904	304	1,208	40,597	76,701	117,298
Yellow pike	587,716	592,454	1,180,170	3,025,336	1,553,318	4,578,654
Blue pike				7,323,592	3,086,500	10,410,092
Sauger	51,273		51,273	1,245,734		1,245,734
Sucker, "mullet"	126,450		126,450	4,765,345		4,765,345
Sheepshead				4,360,745		4,360,745
Yellow perch	9,699	1,742	11,441	4,995,266	2,727,296	7,722,562
Pike (jacks)	220,400	516,563	736,963	398,092	1,099,004	1,497,096
Carp	7,426	4,753	12,179	3,668,590	327,553	3,996,143
White bass				126,324		126,324
Catfish and bullheads	36,111		36,111	815,065	151,400	966,465
Tullibees	658,169	106,241	764,410	662,169	106,241	768,410
Burbot	25,804		25,804	510,972		510,972
Miscellaneous	4,747	284,957	289,704	2,289,784	2,472,497	4,762,281
Total	1,771,103	1,710,392	3,481,495	81,326,550	30,625,981	111,952,531

UNITED STATES

OPERATING UNITS

In conducting the survey of the operating units employed in the lake fisheries for 1927 an effort was made to determine the actual number of men, boats, and amount of gear employed in the fisheries. In making this determination only the average number of units of gear actually fishing simultaneously were counted, and those units being dried on shore, carried on the boats, or held in reserve were disregarded.

Fishermen.—There were 5,825 fishermen employed in the lake fisheries during 1927. Of this number, 72 per cent were engaged in the boat and shore fisheries and 28 per cent in the vessel fisheries. Thirty-three per cent fished on Lake Michigan, 28 per cent on Lake Erie, 17 per cent on Lake Superior, 15 per cent on Lake Huron, 4 per cent on Lake Ontario, and 3 per cent on Lake of the Woods, Rainy Lake, and Namakan Lake.

Vessels.—During 1927 there were 145 steam vessels and 256 motor vessels engaged in the lake fisheries of the United States. Of this number, 39 per cent of the steam vessels and 64 per cent of the motor vessels were engaged in fishing on Lake Michigan, 37 per cent of the steam vessels and 16 per cent of the motor vessels on Lake Erie, 14 per cent of the steam vessels and 11 per cent of the motor vessels were engaged on Lake Huron, 10 per cent of the steam vessels and 7 per cent of the motor vessels on Lake Superior, only 2 motor vessels were engaged on Lake Ontario, and only 1 on Lake of the Woods.

Boats.—There were 1,283 motor boats and 1,078 row boats employed in the lake fisheries during 1927. Of this number, 25 per cent of the motor boats and 16 per cent of the row boats were engaged on Lake Michigan, 25 per cent of the motor boats and 21 per cent of row boats on Lake Erie, 20 per cent of the motor boats and 44 per cent of row boats on Lake Superior, 18 per cent of the motor boats and 7 per cent of the row boats on Lake Huron, 5 per cent of the motor boats and 9 per cent of the row boats on Lake Ontario, and 7 per cent of the motor boats and 3 per cent of the row boats were engaged on Lake of the Woods, Rainy Lake, and Namakan Lake.

Gill nets.—During 1927 an average number of 105,732 gill nets was used in the lake fisheries. These nets had a total area, as fished, of 25,758,647 square yards, or more than 8 square miles. Of this amount, about 51 per cent were used on Lake Michigan, 26 per cent on Lake Erie, 14 per cent on Lake Superior, 8 per cent on Lake Huron, less than 1 per cent on Lake Ontario, and less than 1 per cent on Lake of the Woods, Rainy Lake, and Namakan Lake.

Pound nets.—There were 1,766 pound nets used. Of this total, 48 per cent were used on Lake Huron, 32 per cent on Lake Michigan, 11 per cent on Lake Superior, 5 per cent on Lake Erie, and 4 per cent on Lake of the Woods, Rainy Lake, and Namakan Lake. Fishing with pound nets is not permitted on Lake Ontario by New York State.

Trap nets.—There were 6,316 trap nets fished during 1927. Of this number, 67 per cent were fished on Lake Erie, 24 per cent on Lake Huron, 5 per cent on Lake Ontario, 3 per cent on Lake Michigan, and 1 per cent on Lake Superior. Fishing with trap nets is not permitted by the State of Minnesota in the waters of Lake of the Woods, Rainy Lake, and Namakan Lake.

Fyke nets.—There were 2,373 fyke nets fished on the Great Lakes during 1927. Of this amount, 48 per cent were fished on Lake Erie, 32 per cent on Lake Michigan, 10 per cent on Lake Huron, 5 per cent on Lake Ontario, 4 per cent on Lake of the Woods, Rainy Lake, and Namakan Lake, and 1 per cent on Lake Superior.

Hooks.—There were 689,704 hooks fished during 1927. Forty-six per cent of these were fished on Lake Michigan, 40 per cent on Lake Superior, 10 per cent on Lake Huron, 2 per cent on Lake Erie, and 2 per cent on Lake Ontario. Fishing with trawl lines is not permitted by the State of Minnesota in the waters of Lake of the Woods, Rainy Lake, and Namakan Lake.

Seines.—During 1927 there were 247 seines used in the lake fisheries. Of this number, 64 per cent were fished on Lake Erie, 21 per cent on Lake Huron, 8 per cent on Lake Michigan, 4 per cent on Lake Ontario, and 3 per cent on Lake Superior.

Other apparatus.—Local and minor apparatus consisted of 49 trolling hooks fished on Lake Superior and 4 machine traps operated on the Niagara River.

Lake fisheries of the United States, 1927

OPERATING UNITS: BY STATES

Items	New York	Pennsylvania	Ohio	Michigan	Indiana	Illinois	Wisconsin	Minnesota	Total
Fishermen:									
On boats and shore	308	45	827	1,612	19	24	738	605	4,178
On vessels	116	264	181	707	26	27	324	2	1,647
Total	424	309	1,008	2,319	45	51	1,062	607	5,825
Vessels:									
Steam	8	26	19	64	3	1	24		145
Net tonnage	195	643	464	1,206	69	14	609		3,200
Motor	17	13	14	133	3	6	69	1	256
Net tonnage	110	142	195	1,225	33	55	985	7	2,752
Boats:									
Motor	84	13	250	565	11	8	193	159	1,283
Row	126	7	149	276	1	4	97	418	1,078
Other				7					7
Apparatus:									
Gill nets	7,235	11,332	9,626	42,779	1,293	1,752	25,160	6,555	105,732
Square yards	1,593,511	2,248,700	1,155,614	11,204,098	341,597	362,910	6,677,258	2,174,959	25,758,647
Pound nets		50	36	1,363	10	1	229	77	1,766
Trap nets	348	25	4,034	1,904			5		6,316
Fyke nets	117		840	621		288	420	87	2,373
Hooks	28,950		2,400	464,080	7,200		187,074		689,704
Trolling hooks				49					49
Machine traps	4								4
Seines	9		124	95			19		247
Square yards	2,261		223,272	100,495			21,661		347,689

OPERATING UNITS: BY LAKES

Items	Lake Ontario	Lake Erie	Lake Huron	Lake Michigan	Lake Superior	Lake of the Woods, Rainy Lake, and Namakan Lake	Total
Fishermen:							
On boats and shore	242	1,079	668	1,170	870	149	4,178
On vessels	6	555	196	754	134	2	1,647
Total	248	1,634	864	1,924	1,004	151	5,825
Vessels:							
Steam		53	20	57	15		145
Net tonnage		1,302	398	1,107	393		3,200
Motor	2	42	27	165	19	1	256
Net tonnage	10	437	267	1,879	152	7	2,752
Boats:							
Motor	66	313	234	319	259	92	1,283
Row	94	222	78	177	477	30	1,078
Other			4	3			7
Apparatus:							
Gill nets	1,100	27,096	8,593	53,461	15,135	347	105,732
Square yards	267,530	4,730,717	2,931,155	12,977,656	4,768,452	83,137	25,758,647
Pound nets		86	856	560	187	77	1,766
Trap nets	333	4,210	1,511	207	55		6,316
Fyke nets	117	1,144	251	753	21	87	2,373
Hooks	15,650	15,900	70,050	311,870	276,234		689,704
Trolling hooks					49		49
Machine traps	3	1					4
Seines	9	159	51	20	8		247
Square yards	2,261	265,139	51,433	21,737	7,119		347,689

Fisheries of Lake Ontario, in the United States, 1927

OPERATING UNITS: BY GEAR

Items	Gill nets	Trap nets	Fyke nets	Sturgeon hooks	Seines	Machine traps	Total, exclusive of duplication
Fishermen:							
On boats and shore	97	103	20	46	19	3	242
On vessels	6	1					6
Total	103	104	20	46	19	3	248
Boats:							
Motor	42	27	5	9	2		66
Row	24	26	12	35	9		94
Vessels, motor, 5 to 10 tons	2	1					2
Net tonnage	10	5					10
Apparatus:							
Number	1,100	333	117	15,650	9	3	
Square yards	267,530				2,261		

Fisheries of Lake Erie, in the United States, 1927

OPERATING UNITS: BY GEAR

Items	Gill nets	Pound nets	Trap nets	Fyke nets	Hooks	Seines	Total, exclusive of duplication
Fishermen:							
On boats and shore	106	37	501	96	43	374	1,079
On vessels	555		20	20			555
Total	661	37	521	116	43	374	1,634
Boats:							
Motor	40	11	173	36	2	78	313
Row	26	2	16	8	40	142	222
Vessels:							
Steam—							
5 to 10 tons	1		1	1			2
11 to 20 tons	12						12
21 to 30 tons	29		1	1			30
31 to 40 tons	7						7
41 to 50 tons	1						1
51 to 60 tons	1						1
Total	51		2	2			53
Net tonnage	1,270		32	32			1,302
Motor—							
5 to 10 tons	30						30
11 to 20 tons	8						8
21 to 30 tons	2						2
31 to 40 tons	2						2
Total	42						42
Net tonnage	437						437
Grand total	93		2	2			95
Net tonnage	1,707		32	32			1,739
Apparatus: [1]							
Number	27,096	86	4,210	1,144	15,900	159	
Square yards	4,730,717					265,139	

[1] In addition to the above apparatus 1 machine trap was operated.

Fisheries of Lake Huron, in the United States, 1927

OPERATING UNITS: BY GEAR

Items	Gill nets	Pound nets	Trap nets	Fyke nets	Hooks	Seines	Total, exclusive of duplication
Fishermen:							
On boats and shore	180	342	188	31	16	129	668
On vessels	174	24	26	4	47		196
Total	354	366	214	35	63	129	864
Boats:							
Motor	63	115	73	15	9	38	234
Row	36	7	8	6	2	28	78
Other	4						4
Vessels:							
Steam—							
5 to 10 tons	4	1	1		2		5
11 to 20 tons	7	2	1		1		8
21 to 30 tons	3				2		3
31 to 40 tons	3				1		3
51 to 60 tons	1						1
Total	18	3	2		6		20
Net tonnage	378	32	20		113		398
Motor—							
5 to 10 tons	14	5	5	1	2		17
11 to 20 tons	6		4		1		10
Total	20	5	9	1	3		27
Net tonnage	192	35	95	9	32		267
Grand total	38	8	11	1	9		47
Net tonnage	570	67	115	9	145		665
Apparatus:							
Number	8,593	856	1,511	251	70,050	51	
Square yards	2,931,155					51,433	

Fisheries of Lake Michigan, 1927

OPERATING UNITS: BY GEAR

Items	Gill nets	Pound nets	Trap nets	Fyke nets	Hooks	Seines	Total, exclusive of duplication
Fishermen:							
On boats or shore	962	301	35	107	46	42	1,170
On vessels	705	22		89	161		754
Total	1,667	323	35	196	207	42	1,924
Boats:							
Motor	251	49	12	42	15	14	319
Row	138	21	9	30	11	11	177
Sail	2	1					3
Vessels:							
Steam—							
5 to 10 tons	9	1			2		10
11 to 20 tons	24	2			5		25
21 to 30 tons	10				5		12
31 to 40 tons	6				4		7
41 to 50 tons	2				1		2
51 to 60 tons	1						1
Total	52	3			17		57
Net tonnage	1,000	37			375		1,107
Motor—							
5 to 10 tons	96	19	6	8	20		105
11 to 20 tons	39	2	1		11		41
21 to 30 tons	10				2		11
31 to 40 tons	6				1		6
41 to 51 tons	2						2
Total	153	21	7	8	34		165
Net tonnage	783	165	51	60	390		1,879
Grand total	205	24	7	8	51		222
Net tonnage	1,783	202	51	60	765		2,986
Apparatus:							
Number	53,461	560	207	753	311,870	20	
Square yards	12,977,656					21,737	

Fisheries of Lake Superior, in the United States, 1927

OPERATING UNITS: By gear

Items	Gill nets	Pound nets	Trap nets	Fyke nets	Hooks	Trolling hooks	Seines	Total, exclusive of duplication
Fishermen:								
On boats or shore	796	86	18	11	165	10	8	870
On vessels	121	2		2	57			134
Total	917	88	18	13	222	10	8	1,004
Boats:								
Motor	219	39	6	6	93	8	2	259
Row	465	12	8	4	11		6	477
Vessels:								
Steam—								
5 to 10 tons	3	1			2			3
11 to 20 tons	3				2			3
21 to 30 tons	3				1			3
31 to 40 tons	3				2			3
41 to 50 tons	1				1			2
51 to 60 tons	1							1
Total	14	1			8			15
Net tonnage	350	10			225			393
Motor:								
5 to 10 tons	10	1		1	9			13
11 to 20 tons	5	4			2			6
Total	15	5		1	11			19
Net tonnage	116	42		6	88			152
Grand total	29	6		1	19			34
Net tonnage	466	52		6	313			545
Apparatus:								
Number	15,135	187	55	21	276,234	49	8	
Square yards	4,768,452						7,119	

Fisheries of Lake of the Woods, Rainy Lake, and Namakan Lake, in the United States, 1927

OPERATING UNITS: By gear

Items	Gill nets	Pound nets	Fyke nets	Total, exclusive of duplication
Fishermen:				
On boats and shore	121	33	22	149
On vessels	2			2
Total	123	33	22	151
Boats:				
Motor	75	20	20	92
Row	28		2	30
Vessels, motor, 5 to 10 tons	1			1
Net tonnage	7			7
Apparatus:				
Number	347	77	87	
Square yards	83,137			

Lake fisheries of the United States, 1927

OPERATING UNITS: BY LAKES

Items	New York			Pennsylvania, Lake Erie	Ohio, Lake Erie
	Lake Ontario	Lake Erie	Total		
Fishermen:					
On boats and shore	242	66	308	45	827
On vessels	6	110	116	264	181
Total	248	176	424	309	1,008
Boats:					
Motor	66	18	84	13	250
Row	94	32	126	7	149
Vessels:					
Steam		8	8	26	19
Net tons		195	195	643	464
Motor	2	15	17	13	14
Net tons	10	100	110	142	195
Total	2	23	25	39	33
Net tons	10	295	305	785	659
"Shoal" gill nets, 3–3 1/16 inches: [1]					
Fished by boats	409	237	646	122	1,163
Square yards	77,460	31,395	108,855	17,694	52,524
Fished by vessels	20	2,086	2,106	7,784	7,370
Square yards	1,778	287,754	289,532	1,232,827	823,495
Total	429	2,323	2,752	7,906	8,533
Square yards	79,238	319,149	398,387	1,250,521	876,017
"Shoal" gill nets, 4 1/2–6 inches: [2]					
Fished by boats	503	72	575		90
Square yards	109,147	11,520	120,667		12,000
Fished by vessels	110	2,360	2,470	840	
Square yards	20,889	522,416	543,305	117,520	
Total	613	2,432	3,045	840	90
Square yards	130,036	533,936	663,972	117,520	12,000
"Bull" gill nets, 3–3 1/16 inches: [1]					
Fished by boats		48	48		
Square yards		18,432	18,432		
Fished by vessels		880	880	1,738	832
Square yards		345,205	345,205	707,699	254,720
Total		928	928	1,738	832
Square yards		363,637	363,637	707,699	254,720
"Bull" gill nets, 4 1/2–5 1/2 inches: [2]					
Fished by boats		72	72		
Square yards		15,360	15,360		
Fished by vessels		296	296	848	
Square yards		75,777	75,777	172,960	
Total		368	368	848	
Square yards		91,137	91,137	172,960	
Sturgeon gill nets, 10–12 inches: [3]					
Fished by boats	58	84	142		
Square yards	58,256	18,122	76,378		
Bar gill nets, 5 inches: [4]					
Fished by boats					147
Square yards					11,917
Perch gill nets, 2 3/4 inches: [5]					
Fished by boats					24
Square yards					960

[1] Used principally for taking ciscoes in Lake Erie and lake herring in Lake Ontario.
[2] Used principally for taking whitefish, trout, and suckers.
[3] Used principally for taking sturgeon.
[4] Used principally for taking carp.
[5] Used principally for taking perch.

Lake fisheries of the United States, 1927—Continued

OPERATING UNITS: By lakes—Continued

Items	New York			Pennsylvania, Lake Erie	Ohio, Lake Erie
	Lake Ontario	Lake Erie	Total		
Pound nets, fished by boats [6]				50	36
Trap nets: [6]					
Fished by boats	332	15	347	25	3,984
Fished by vessels	1		1		50
Total	333	15	348	25	4,034
Fyke nets: [6]					
Fished by boats	117		117		660
Fished by vessels					180
Total	117		117		840
Hooks: Fished by boats [7]					2,400
Sturgeon hooks, fished by boats [8]	15,650	13,300	28,950		
Machine traps [9]	3	1	4		
Seines: Fished by boats [10]	9		9		124
Square yards	2,261		2,261		223,272

Items	Michigan					Indiana, Lake Michigan
	Lake Erie	Lake Huron	Lake Michigan	Lake Superior	Total	
Fishermen:						
On boats and shore	141	668	518	285	1,612	19
On vessels		196	391	120	707	26
Total	141	864	909	405	2,319	45
Boats:						
Motor	32	234	164	135	565	11
Row	34	78	108	56	276	1
Other		4	3		7	
Vessels:						
Steam		20	30	14	64	3
Net tons		398	448	360	1,206	69
Motor		27	90	16	133	3
Net tons		267	828	130	1,225	33
Total		47	120	30	197	6
Net tons		665	1,276	490	2,431	102
Gill nets, 2¼–2¾ inches: [1]						
Fished by boats	3	518	2,492	610	3,623	112
Square yards	422	104,652	283,201	111,877	500,152	19,250
Fished by vessels		2,140	4,162	354	6,656	587
Square yards		703,950	946,409	79,312	1,729,671	149,980
Total	3	2,658	6,654	964	10,279	699
Square yards	422	808,602	1,229,610	191,189	2,229,823	169,230

[1] Used principally for taking chubs, herring, perch, and Menominees. In Michigan the minimum-sized mesh allowed by the State law is 2½ inches.
[6] Used for taking miscellaneous fish.
[7] Used principally for taking catfish.
[8] Used principally for taking sturgeon.
[9] Used principally for taking lake herring, blue pike, suckers, and shad.
[10] Used principally for taking carp, catfish, bullheads, and burbot

Lake fisheries of the United States, 1927—Continued

OPERATING UNITS: By lakes—Continued

Items	Michigan					Indiana, Lake Michigan
	Lake Erie	Lake Huron	Lake Michigan	Lake Superior	Total	
Gill nets, 4–6-inches:[2]						
Fished by boats		2,106	5,733	3,095	10,934	42
Square yards		705,252	1,192,982	788,148	2,686,382	10,500
Fished by vessels		3,829	14,959	2,778	21,566	552
Square yards		1,417,301	3,810,746	1,059,846	6,287,893	161,867
Total		5,935	20,692	5,873	32,500	594
Square yards		2,122,553	5,003,728	1,847,994	8,974,275	172,367
Pound nets:[3]						
Fished by boats		820	294	89	1,203	10
Fished by vessels		36	80	44	160	
Total		856	374	133	1,363	10
Trap nets:[3]						
Fished by boats	136	1,340	63	54	1,593	
Fished by vessels		171	140		311	
Total	136	1,511	203	54	1,904	
Fyke nets:[3]						
Fished by boats	304	241	66		611	
Fished by vessels		10			10	
Total	304	251	66		621	
Hooks:[4]						
Fished by boats	200	15,900	14,720	135,310	166,130	
Fished by vessels		54,150	121,400	122,400	297,950	7,200
Total	200	70,050	136,120	257,710	464,080	7,200
Trolling hooks, fished by boats[4]				49	49	
Seines, fished by boats[5]	35	51	1	8	95	
Square yards	41,867	51,433	76	7,119	100,495	

Items	Illinois, Lake Michigan	Wisconsin			Minnesota		
		Lake Michigan	Lake Superior	Total	Lake Superior	Lake of the Woods, Rainy Lake, and Namakan Lake	Total
Fishermen:							
On boats and shore	24	609	129	738	456	149	605
On vessels	27	310	14	324		2	2
Total	51	919	143	1,062	456	151	607
Boats:							
Motor	8	136	57	193	67	92	159
Row	4	64	33	97	388	30	418
Vessels:							
Steam	1	23	1	24			
Net tons	14	576	33	609			
Motor	6	66	3	69		1	1
Net tons	55	963	22	985		7	7
Total	7	89	4	93		1	1
Net tons	69	1,539	55	1,594		7	7

[2] Used principally for taking whitefish, trout, and suckers. In Michigan the minimum-sized mesh allowed by the State law is 4½ inches.
[3] Used for taking miscellaneous fish.
[4] Used principally for taking trout.
[5] Used principally for taking carp, pike, perch, and suckers.

Lake fisheries, of the United States, 1927—Continued

OPERATING UNITS: By lakes—Continued

Items	Illinois, Lake Michigan	Wisconsin			Minnesota		
		Lake Michigan	Lake Superior	Total	Lake Superior	Lake of the Woods, Rainy Lake, and Namakan Lake	Total
Gill nets, 2¾–2¾ inches: [1]							
Fished by boats	441	6,321	450	6,771	4,671	----	4,671
Square yards	69,663	800,418	110,223	910,641	1,537,464	----	1,537,464
Fished by vessels	528	6,315	132	6,447	----	----	----
Square yards	100,725	1,903,970	40,614	1,944,584	----	----	----
Total	969	12,636	582	13,218	4,671	----	4,671
Square yards	170,388	2,704,388	150,837	2,855,225	1,537,464	----	1,537,464
Gill nets, 4–6 inches: [2]							
Fished by boats	210	5,114	1,370	6,484	1,537	343	1,880
Square yards	40,906	837,289	428,410	1,265,699	554,358	81,803	636,161
Fished by vessels	573	5,320	138	5,458	----	4	4
Square yards	151,616	2,498,134	58,200	2,556,334	----	1,334	1,334
Total	783	10,434	1,508	11,942	1,537	347	1,884
Square yards	192,522	3,335,423	486,610	3,822,033	554,358	83,137	637,495
Pound nets: [3]							
Fished by boats	1	171	54	225	----	77	77
Fished by vessels	----	4	----	4	----	----	----
Total	1	175	54	229	----	77	77
Trap nets: [3] Fished by boats	----	4	1	5	----	----	----
Fyke nets: [3]							
Fished by boats	213	349	17	366	----	87	87
Fished by vessels	75	50	4	54	----	----	----
Total	288	399	21	420	----	87	87
Hooks: [4]							
Fished by boats	----	21,150	18,524	39,674	----	----	----
Fished by vessels	----	147,400	----	147,400	----	----	----
Total	----	168,550	18,524	187,074	----	----	----
Seines: [5] Fished by boats	----	19	----	19	----	----	----
Square yards	----	21,661	----	21,661	----	----	----

[1] Used principally for taking chubs, herring, perch, and bluefin. In Illinois the minimum sized mesh allowed by State law is 2½ inches.
[2] Used principally for taking whitefish, trout, pike, and suckers. In Illinois the minimum sized mesh allowed by State law is 4½ inches.
[3] Used for taking miscellaneous fish.
[4] Used principally for taking trout.
[5] Used principally for taking carp and suckers.

CATCH

Michigan, with frontage on Lakes Erie, Huron, Michigan, and Superior, ranked first in importance in the Lake fisheries of the United States in 1927. The catch in the waters of this State amounted to 32,503,014 pounds, valued at $3,078,151. This is 40 per cent of the total quantity of the Lakes production in the United States and 45 per cent of the total value. Ohio, with fisheries only on Lake Erie, ranked second with a catch of 16,653,943 pounds, valued at $1,064,883. This is 20 per cent of the total quantity and 16 per cent of the total value. Wisconsin, with fisheries in Lakes Michigan and Superior, ranked third with a catch of 12,410,466 pounds, valued at $1,127,015. This represents 15 per cent of the total quantity and

17 per cent of the total value. Minnesota was fourth with a catch of 12,167,316 pounds, valued at $583,607. Minnesota has fisheries on Lake Superior, Lake of the Woods, Rainy Lake, and Namakan Lake, and its catch in these waters amounted to 15 per cent of the total quantity and 9 per cent of the total value. The catch of Pennsylvania, which is taken entirely in Lake Erie, amounted to 4,408,194 pounds, valued at $512,184. This is 5 per cent of the total quantity and 8 per cent of the total value. The catch of New York, which was taken from Lakes Ontario and Erie, amounted to 2,019,542 pounds, valued at $257,807. This is 2 per cent of the total catch and 4 per cent of the total value. The catch in Indiana amounted to 775,716 pounds, valued at $113,507. This is about 1 per cent of the total production and 2 per cent of the total value. The catch of Illinois amounted to 388,359 pounds, valued at $57,737. This is less than 1 per cent of the total production and 1 per cent of the total value.

Lake fisheries of the United States, 1927

CATCH: BY STATES

Species	New York		Pennsylvania		Ohio		Michigan	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Lake trout	50,610	$7,993	52	$7			6,785,335	$1,064,651
Whitefish	259,869	53,448	288,135	72,476	242,101	$48,420	4,180,492	751,549
Lake herring	102,347	8,990					9,923,532	316,994
Chubs							2,604,661	237,668
Cisco	612,050	77,435	1,624,737	198,048	113,452	13,614		
Sturgeon	24,546	11,919	1,109	444			12,861	4,033
Yellow pike	24,522	4,292	19,175	2,676	1,268,670	204,256	1,007,387	221,123
Blue pike	497,366	49,445	2,189,557	214,379	4,636,669	296,747		
Sauger					1,144,197	89,247	50,264	4,621
Sucker "mullet"	140,776	9,670	20,329	577	971,666	43,725	3,491,154	240,097
Sheepshead			33,808	1,345	4,065,713	89,446	261,224	4,000
Yellow perch	79,555	7,838	206,329	19,881	2,468,417	182,663	665,470	51,804
Pike (jacks)							63,661	5,794
Carp	18,879	1,660	3,465	125	733,911	36,696	2,904,909	123,811
White bass			4,343	347	116,781	11,678		
Catfish and bullheads	41,950	7,427	3,157	377	535,730	41,259	198,117	27,129
Burbot	88,709	9,256	7,443	118	349,921	6,998	15,534	581
Miscellaneous	78,363	8,434	6,555	1,384	6,715	134	338,413	24,296
Total	2,019,542	257,807	4,408,194	512,184	16,653,943	1,064,883	32,503,014	3,078,151

Species	Indiana		Illinois		Wisconsin		Minnesota		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Lake trout	252,546	$50,509	167,354	$31,797	2,912,763	$520,173	323,699	$45,412	10,492,359	$1,720,542
Whitefish	22,436	5,609			388,433	68,458	81,462	10,874	5,462,928	1,010,834
Lake herring	143,352	14,335	29,045	2,905	2,702,990	90,829	9,275,861	329,277	22,177,127	763,330
Chubs	234,184	28,104	175,270	21,032	3,042,758	276,258	559,413	33,746	6,616,286	596,808
Cisco									2,350,239	289,097
Sturgeon					800	190	1,281	542	40,597	17,128
Yellow pike					48,859	8,983	656,723	98,761	3,025,336	540,091
Blue pike									7,323,592	560,571
Sauger							51,273	4,151	1,245,734	98,019
Sucker "mullet"	1,949	195					139,471	3,693	4,765,345	297,957
Sheepshead									4,360,745	94,791
Yellow perch	92,488	11,099	16,690	2,003	1,445,664	71,290	20,653	2,053	4,995,266	348,631
Pike (jacks)					22,956	2,366	311,475	17,333	398,092	25,493
Carp							7,426	497	3,668,590	162,789
White bass					5,200	520			126,324	12,545
Catfish and bullheads							36,111	3,971	815,065	80,163
Tullibees							662,169	31,435	662,169	31,435
Burbot	23,561	2,356					25,804	444	510,972	19,753
Miscellaneous	5,200	1,300			1,840,043	87,948	14,495	1,418	2,289,784	124,914
Total	775,716	113,507	388,359	57,737	12,410,466	1,127,015	12,167,316	583,607	81,326,550	6,794,891

Lake fisheries of the United States, 1927—Continued

CATCH: BY LAKES

Species	Lake Erie									
	New York		Pennsylvania		Ohio		Michigan		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Lake trout	8,814	$1,084	52	$7					8,866	$1,091
Whitefish	94,209	24,068	288,135	72,476	242,101	$48,420			624,445	144,964
Chubs							1,187	$119	1,187	119
Cisco	612,050	77,435	1,624,737	198,048	113,452	13,614			2,350,239	289,097
Sturgeon	5,325	2,588	1,109	444					6,434	3,032
Yellow pike	5,352	672	19,175	2,676	1,268,670	204,256	71,296	11,202	1,364,493	218,806
Blue pike	475,145	46,678	2,189,557	214,379	4,636,669	296,747			7,301,371	557,804
Sauger					1,144,197	89,247	23,618	1,862	1,167,815	91,109
Sucker, "mullet"	78,829	4,781	20,329	577	971,666	43,725	71,137	3,790	1,141,961	52,873
Sheepshead			33,808	1,345	4,065,713	89,446	218,922	2,031	4,318,443	92,822
Yellow perch	40,369	4,309	206,329	19,881	2,468,417	182,663	32,339	3,156	2,747,454	210,009
Pike (jacks)							15,420	576	15,420	576
Carp	1,240	63	3,465	125	733,911	36,696	959,662	67,583	1,698,278	104,467
White bass			4,343	347	116,781	11,678			121,124	12,025
Catfish and bullheads	388	48	3,157	377	535,730	41,259	18,068	2,121	557,343	43,805
Burbot			7,443	118	349,921	6,998	700	48	358,064	7,164
Miscellaneous			6,555	1,384	6,715	134	255	3	13,525	1,521
Total	1,321,721	161,726	4,408,194	512,184	16,653,943	1,064,883	1,412,604	92,491	23,796,462	1,831,284

Species	Lake Michigan									
	Michigan		Indiana		Illinois		Wisconsin		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Lake trout	2,900,036	$494,852	252,546	$50,509	167,354	$31,797	2,378,688	$459,225	5,698,624	$1,036,383
Whitefish	2,254,623	384,124	22,436	5,609			314,232	58,089	2,591,291	447,822
Lake herring	3,932,068	82,165	143,352	14,335	29,045	2,905	1,737,766	67,961	5,842,231	167,366
Chubs	1,381,715	112,893	234,184	28,104	175,270	21,032	2,973,600	272,627	4,764,769	434,656
Sturgeon	4,618	1,894					800	190	5,418	2,084
Yellow pike	24,055	4,194					35,144	6,131	59,199	10,325
Sucker, "mullet"	812,667	46,249	1,949	195					814,616	46,444
Sheepshead	1,960	192							1,960	192
Yellow perch	417,712	22,551	92,488	11,099	16,690	2,003	1,442,965	70,950	1,969,855	106,603
Pike (jacks)	9,887	1,140					18,870	1,807	28,757	2,947
Carp	6,487	395							6,487	395
Catfish and bullheads	287	21							287	21
Burbot	11,447	436	23,561	2,356					35,008	2,792
Miscellaneous	201,388	13,743	5,200	1,300			1,655,794	81,764	1,862,382	96,807
Total	11,958,950	1,164,849	775,716	113,507	388,359	57,737	10,557,859	1,018,744	23,680,884	2,354,837

Species	Lake Superior							
	Michigan		Wisconsin		Minnesota		Total	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Lake trout	2,193,602	$304,844	534,075	$60,948	323,612	$45,403	3,051,289	$411,195
Whitefish	249,253	39,175	74,201	10,369	4,703	739	328,157	50,283
Lake herring	387,091	19,439	965,224	22,868	9,275,861	329,277	10,628,176	371,584
Chubs	396,273	31,008	69,158	3,631	412,502	27,201	877,933	61,840
Sturgeon	210	102					210	102
Yellow pike	10,635	1,952	13,715	2,852			24,350	4,804
Sauger	12	1					12	1
Sucker, "mullet"	146,775	7,118			1,800	19	148,575	7,137
Yellow perch	11,877	1,451	2,699	340			14,576	1,791
Pike (jacks)	2,617	297	4,086	559			6,703	856
White bass			5,200	520			5,200	520
Burbot	370	19					370	19
Miscellaneous	22,014	1,040	184,249	6,184	9,748	784	216,011	8,008
Total	3,420,729	406,446	1,852,607	108,271	10,028,226	403,423	15,301,562	918,140

Lake fisheries of the United States, 1927—Continued

CATCH: BY LAKES—continued

Species	Lake Ontario		Lake Huron		Lake of the Woods, Rainy Lake, and Namakan Lake		Total all lakes	
	New York		Michigan		Minnesota			
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Lake trout	41,796	$6,909	1,691,697	$264,955	87	$9	10,492,359	$1,720,542
Whitefish	165,660	29,380	1,676,616	328,250	76,759	10,135	5,462,928	1,010,834
Lake herring	102,347	8,990	5,604,373	215,390			22,177,127	763,330
Chubs			825,486	93,648	146,911	6,545	6,616,286	596,808
Cisco							2,350,239	289,097
Sturgeon	19,221	9,331	8,033	2,037	1,281	542	40,597	17,128
Yellow pike	19,170	3,620	901,401	203,775	656,723	98,761	3,025,336	540,091
Blue pike	22,221	2,767					7,323,592	560,571
Sauger			26,634	2,758	51,273	4,151	1,245,734	98,019
Sucker, "mullet"	61,947	4,889	2,460,575	182,940	137,671	3,674	4,765,345	297,957
Sheepshead			40,342	1,777			4,360,745	94,791
Yellow perch	39,186	3,529	203,542	24,646	20,653	2,053	4,995,266	348,631
Pike (jacks)			35,737	3,781	311,475	17,333	398,092	25,493
Carp	17,639	1,597			7,426	497	3,668,590	162,789
White bass			1,938,760	55,833			126,324	12,545
Catfish and bullheads	41,562	7,379	179,762	24,987	36,111	3,971	815,065	80,163
Tullibees					662,169	31,435	662,169	31,435
Burbot	88,709	9,256	3,017	78	25,804	444	510,972	19,753
Miscellaneous	78,363	8,434	114,756	9,510	4,747	634	2,289,784	124,914
Total	697,821	96,081	15,710,731	1,414,365	2,139,090	180,184	81,326,550	6,794,891

Lake fisheries of the United States and Canada, 1913 to 1927

CATCH: BY LAKES

[Expressed in thousands of pounds; that is, 000 omitted]

Years	Lake Ontario			Lake Erie			Lake Huron			Lake Michigan
	United States[1]	Canada[2]	Total	United States	Canada	Total	United States	Canada	Total	United States
Average, 1913–1914	243	3,241	3,484	37,845	19,768	57,613	9,716	6,449	16,165	27,594
Average, 1915–1919	473	5,127	5,600	45,756	16,313	62,069	14,022	6,977	20,999	28,103
Average, 1920–1924	964	4,903	5,867	40,895	17,527	58,422	10,611	6,768	17,379	17,946
1925	446	4,351	4,797	26,639	11,080	37,719	6,567	7,748	14,315	21,710
1926	788	4,227	5,015	25,057	8,752	33,809	13,132	7,483	20,615	20,495
1927	698	3,842	4,540	23,796	10,069	33,865	15,711	8,864	24,575	23,681

Years	Lake Superior			Lake of the Woods, Rainy Lake, and Namakan Lake			Total		
	United States	Canada	Total	United States[3]	Canada[4]	Total	United States	Canada	Total
Average, 1913–1914	6,752	2,633	9,385	1,315	3,406	4,721	83,467	35,497	118,964
Average, 1915–1919	8,613	6,173	14,786	1,516	3,240	4,756	98,483	37,829	136,312
Average, 1920–1924	7,968	4,041	12,009	1,148	2,536	3,684	79,531	35,776	115,307
1925	12,307	3,567	15,874	1,463	4,411	5,874	69,132	31,157	100,289
1926	13,436	4,311	17,747	2,392	2,725	5,117	75,300	27,498	102,798
1927	15,302	5,152	20,454	2,139	2,699	4,838	81,327	30,626	111,953

[1] Includes the catch of Lake Ontario proper and Chaumont Bay in the years from 1913 to 1924 inclusive, Lake Ontario proper in 1925, and Lake Ontario proper, Niagara River below the falls, St. Lawrence River, and Chaumont, Black River, Port, Great Sodus, and Little Sodus Bays in 1926 and 1927.

[2] Includes the catch in the Niagara River below the falls.

[3] Does not include the catch in Namakan and Rainy Lakes prior to 1926.

[4] Includes the catch in Lac Suel, Eagle Lake, etc., in the interior of Canada, prior to 1926.

NOTE.—The catch in the Detroit River, St. Clair River, and Lake St. Clair are not included in these statistics.

Lake fisheries of the United States and Canada, 1913 to 1927—Continued

CATCH: BY SPECIES

[Expressed in thousands of pounds; that is, 000 omitted]

Years	Lake trout			Whitefish			Lake herring		
	United States	Canada	Total	United States	Canada	Total	United States	Canada	Total
Average, 1913–1914	10,385	5,289	15,674	4,627	5,015	9,642	14,255	1,593	15,848
Average, 1915–1919	10,724	6,025	16,749	5,049	5,463	10,512	19,052	4,802	23,854
Average, 1920–1924	10,298	5,848	16,146	3,793	6,181	9,974	12,679	1,753	14,432
1925	11,125	6,860	17,985	3,668	5,660	9,328	14,549	1,683	16,232
1926	11,559	6,433	17,992	5,148	4,800	9,948	16,522	2,807	19,329
1927	10,493	7,077	17,570	5,463	4,792	10,255	22,177	3,474	25,651

Years	Chubs			Cisco			Sturgeon		
	United States	Canada	Total	United States	Canada	Total	United States	Canada	Total
Average, 1913–1914	4,550	408	4,958	13,310	8,795	22,105	72	202	274
Average, 1915–1919	5,254	496	5,750	19,381	9,180	28,561	76	130	206
Average, 1920–1924	2,729	242	2,971	16,821	8,266	25,087	30	89	119
1925	6,016	429	6,445	2,817	2,840	5,657	24	90	114
1926	6,069	973	7,042	1,449	1,573	3,022	38	84	122
1927	6,616	1,375	7,991	2,350	2,309	4,659	41	77	118

Years	Yellow pike			Blue pike			Sauger	Sucker or mullet	Sheepshead
	United States	Canada	Total	United States	Canada	Total	United States	United States	United States
Average, 1913–1914	2,212	3,224	5,436	6,658	1,728	8,386	2,908	4,590	1,439
Average, 1915–1919	3,301	1,904	5,205	6,582	2,235	8,817	3,962	4,715	2,548
Average, 1920–1924	2,556	2,171	4,727	8,389	4,476	12,865	3,547	3,563	2,032
1925	2,320	2,343	4,663	10,513	3,445	13,958	2,119	2,762	2,395
1926	2,828	1,623	4,451	9,362	3,031	12,393	1,634	4,122	1,325
1927	3,025	1,553	4,578	7,324	3,087	10,411	1,246	4,765	4,361

Years	Yellow perch			Pike (jacks)			Carp			White bass
	United States	Canada	Total	United States	Canada	Total	United States	Canada	Total	United States
Average, 1913–1914	5,898	1,396	7,294	460	3,852	4,312	7,056	1,019	8,075	502
Average, 1915–1919	5,302	1,486	6,788	456	1,659	2,115	5,901	990	6,891	341
Average, 1920–1924	4,057	2,220	6,277	444	1,086	1,530	4,781	484	5,265	540
1925	4,110	2,233	6,343	269	1,160	1,429	2,409	327	2,736	232
1926	5,407	1,956	7,363	302	952	1,254	4,649	292	4,941	158
1927	4,995	2,727	7,722	398	1,099	1,497	3,669	327	3,996	126

Years	Catfish			Tullibees			Burbot	Miscellaneous fish		
	United States	Canada	Total	United States	Canada	Total	United States	United States	Canada	Total
Average, 1913–1914	498	362	860	----	152	152	75	3,969	2,461	6,430
Average, 1915–1919	1,170	381	1,551	----	211	211	257	4,410	2,868	7,278
Average, 1920–1924	833	257	1,090	----	149	149	366	2,076	2,559	4,635
1925	835	233	1,068	301	461	762	269	2,399	3,393	5,792
1926	910	173	1,083	990	164	1,154	373	2,455	2,637	5,092
1927	815	151	966	662	106	768	511	2,290	2,472	4,762

FISHERIES OF THE MISSISSIPPI RIVER AND TRIBUTARIES

The latest statistical canvass made of the fisheries and fishery industries of the Mississippi River and tributaries was for the calendar year 1922. The complete statistics for the canvass were published in the report of the division of fishery industries for 1923 and in Statistical Bulletin No. 607. During 1922 the fisheries and fishery industries of this region employed 19,122 persons, and the yield of the fisheries amounted to 105,733,734 pounds, valued at $4,503,521.

LAKE PEPIN

The fisheries of Lake Pepin, exclusive of those prosecuted for mussel shells, in 1928 employed 124 fishermen, compared with 139 in 1927. The catch amounted to 720,658 pounds, valued at $44,661, a decrease from 1927 of 17 per cent in quantity and 20 per cent in value. Compared with 1922 there has been a decline of 80 per cent in quantity. In 1928 German carp was by far the most important species taken in this lake, constituting 68 per cent of the total catch and 53 per cent of the value of the catch. Drum, catfish, suckers, and buffalofish made up the majority of the remainder of the catch.

Operating units.—In 1928, 124 fishermen employed 43 motor boats and 98 other small boats. The gear used consisted of 27 haul seines, 67 fish traps, 127 gill nets, 100 fyke nets, 2 spears, and 5 lines, named in the order of the value of their catches.

Catch by gear.—Two types of gear accounted for 92 per cent of the fishery products taken in this lake during 1928. By far the most important of these were haul seines, which accounted for 73 per cent of the catch and 63 per cent of the value of the catch, and fish traps, which accounted for 19 per cent of the catch and 30 per cent of the value of the catch.

Fisheries of Lake Pepin, 1928

OPERATING UNITS AND CATCH: BY GEAR

Items	Haul seines		Gill nets		Lines	
Fishermen	89		15		1	
Boats:						
Motor	27		4		1	
Other	68		7		1	
Fishing apparatus	27		127		5	
Length in yards	15,695		6,316		833	
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bowfin	3,062	$86				
Buffalofish	12,297	1,006	755	$85		
Carp, German	428,487	20,193	26,080	1,906	214	$11
Carp, American, or quillback	673	34				
Catfish	10,012	1,336			118	14
Drum, fresh-water, or sheepshead	40,531	3,388				
Mooneye	1,200	12				
Paddlefish	7,827	939				
Suckers	22,337	1,072				
Total	526,426	28,066	26,835	1,991	332	25

Fisheries of Lake Pepin, 1928—Continued

OPERATING UNITS AND CATCH: BY GEAR—Continued

Items	Fish traps		Fyke nets		Spears		Total [1]	
Fishermen	27		18		2		124	
Boats:								
Motor	12		9				43	
Other	26		6		2		98	
Fishing apparatus	67		100		2			
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bowfin	646	$16	4,769	$119			8,477	$221
Buffalofish	10,871	1,249	69	6			23,992	2,346
Carp, German	12,839	811	19,413	867	990	$59	488,023	23,847
Carp, American, or quillback	2,166	74					2,839	108
Catfish	41,838	6,063	380	45	8	1	52,356	7,459
Drum, fresh-water, or sheepshead	56,862	4,597	4,189	210			101,582	8,195
Eels	222	22	13	2			235	24
Mooneye	400	8					1,600	20
Paddlefish	82	7					7,909	946
Suckers	8,649	337	2,659	86			33,645	1,495
Total	134,575	13,184	31,492	1,335	998	60	720,658	44,661

[1] Exclusive of duplication.

Fisheries of Lake Pepin, 1914 to 1928

OPERATING UNITS AND CATCH

Items	1914	1917	1922	1927	1928
Fishermen	135	126	219	139	124
Boats:					
Motor	28	35	109	39	43
Other	54	55	136	105	98
Fishing apparatus:					
Haul seines	14	17	33	23	27
Gill nets	664	371	351	152	127
Lines					5
Fish traps	8	14			67
Fyke nets	295	262	95	280	100
Spears			7	4	2
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Bowfin	1,534	24,021	16,136	3,334	8,477
Buffalofish	261,250	300,808	340,309	33,449	23,992
Carp, German	237,517	467,588	2,578,916	615,242	488,023
Carp, American, or quillback	60,605	14,238	47,377	4,825	2,839
Catfish and bullheads	26,830	254,249	127,384	53,076	52,356
Drum, fresh-water, or sheepshead	131,785	118,304	395,592	113,793	101,582
Eels			541	318	235
Mooneye, fresh	9,300	7,656		8,976	1,600
Mooneye, smoked	1,465	7,250			
Paddlefish or spoonbill cat	8,877	2,923	15,971	1,191	7,909
Pike (grass)	50				
Sturgeon, lake	1,067	512	5,253		
Sturgeon, shovelnose			1,080		
Suckers	18,340	15,260	43,466	31,911	33,645
Sunfish	50				
Turtles			442		
Total	758,670	1,212,809	3,572,467	866,125	720,658

LAKE KEOKUK

The fisheries of Lake Keokuk, exclusive of those for mussel shells, in 1928 employed 85 fishermen, compared with 102 in 1927. The catch amounted to 537,794 pounds, valued at $44,277, or a decrease

from 1927 of 5 per cent in quantity and an increase of 1 per cent in value. Since 1917 there has been a decline in quantity of 70 per cent.

The most important species taken, according to value, was catfish, with a total catch of 163,576 pounds, valued at $20,748. The catch of German carp amounted to 281,419 pounds, valued at $16,905. The combined totals of these two species made up over 83 per cent of the total output and 85 per cent of its value. Of the other species, buffalofish and drum alone are deserving of mention, 36,498 pounds of buffalofish, valued at $3,790, and 16,809 pounds of drum, valued at $1,070, being taken.

Operating units.—In 1928, 85 fishermen employed 56 motor boats and 70 other small boats. The gear consisted of 4 haul seines, 30 gill nets, 13 lines, 7 fish traps, 1,547 fyke nets, and 692 baskets.

Catch by gear.—Fyke nets and fish baskets together took nearly 94 per cent of the entire catch, which consisted mainly of catfish and German carp. The combined value of the fish taken by these two types of gear accounted for about 94 per cent of the total value of all fish taken in the lake.

Fisheries of Lake Keokuk, 1928

OPERATING UNITS AND CATCH: BY GEAR

Items	Haul seines		Gill nets		Lines		Fish traps	
Fishermen	10		2		16		4	
Boats:								
Motor	2				3		2	
Other	4		1		12		2	
Fishing apparatus	4		30		13		7	
Length in yards	450		1,500		6,500			
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bowfin					1,339	$41		
Buffalofish			960	$96				
Carp, German	6,830	$359	1,000	50	8,230	494	2,900	$149
Carp, American, or quillback							400	16
Catfish	861	88			9,090	1,121	950	106
Drum, fresh-water, or sheepshead	282	15			1,009	66	375	21
Sunfish	150	12						
Total	8,123	474	1,960	146	19,668	1,722	4,625	292

Items	Fyke nets		Baskets		Total [1]	
Fishermen	66		35		85	
Boats:						
Motor	51		28		56	
Other	52		29		70	
Fishing apparatus	1,547		692			
	Pounds	*Value*	*Pounds*	*Value*	*Pounds*	*Value*
Bowfin	12,368	$371			13,707	$412
Buffalofish	35,538	3,694			36,498	3,790
Carp, German	262,459	15,853			281,419	16,905
Carp, American, or quillback	11,067	452			11,467	468
Catfish	34,854	4,729	117,821	$14,704	163,576	20,748
Drum, fresh-water, or sheepshead	15,143	968			16,809	1,070
Paddlefish or spoonbill cat	157	16			157	16
Sunfish	14,011	856			14,161	868
Total	385,597	26,939	117,821	14,704	537,794	44,277

[1] Exclusive of duplication.

Fisheries of Lake Keokuk, 1914 to 1928

OPERATING UNITS AND CATCH

Items	1914	1917	1922	1927	1928
Fishermen	105	118	122	102	85
Boats:					
Motor	36	52	58	70	56
Other	94	80	111	82	70
Fishing apparatus:					
Haul seines		1	2	3	4
Gill nets		12	235	26	30
Trammel nets	14	17	17		
Lines [1]					13
Fish traps		81		815	7
Fyke nets	1,378	1,368	1,301	1,594	1,547
Dip nets			1		
Baskets					692
	Pounds	*Pounds*	*Pounds*	*Pounds*	*Pounds*
Black bass	15	4,163	6,200		
Bowfin		26,000		14,055	13,707
Buffalofish	249,900	696,543	113,946	67,872	36,498
Carp, German	302,365	762,259	276,431	291,199	281,419
Carp, American, or quillback		5,936		9,880	11,467
Catfish and bullheads	71,535	109,904	183,919	140,343	163,576
Crappie	70	17,560	13,770		
Drum, fresh-water, or sheepshead	26,860	160,554	65,040	27,538	16,809
Eels	3,800	2,087			
Paddlefish or spoonbill cat		927	27,405	1,249	157
Pike (grass)		20			
Pike, sauger			2,280		
Sturgeon, lake	1,900	454			
Sturgeon, shovelnose			600		
Suckers	4,640	700			
Sunfish	50	13,879	11,590	13,563	14,161
Turtles				385	
Total	661,135	1,800,986	701,181	566,084	537,794

[1] Lines are omitted in 1914, 1917, 1922, and 1927 because data on the number were not available.

FISHERIES OF ALASKA

The latest statistical canvass, prior to that for 1928, made of the fisheries and fishery industries of Alaska was for the calendar year 1927. The complete statistics for the canvass were published in the report "Alaska fishery and fur-seal industries, 1927," and in Statistical Bulletin No. 790.

In 1928 the fisheries of Alaska employed 31,086 persons, of whom 11,519 were fishermen, 17,812 were employed in the wholesale and manufacturing industries, and 1,755 in transporting fishery products. The catch in the round weight, exclusive of whales, amounted to 690,170,888 pounds, valued at $17,343,034. The round weight of whales could not be determined, but their products amounted to 8,835,000 pounds, valued at $454,274. Of the total catch, exclusive of whales, 517,069,403 pounds, valued at $12,790,138, consisted of salmon; 171,506,365 pounds, valued at $4,465,315, were other fish; and 1,595,120 pounds, valued at $87,581, consisted of shellfish.

In 1928 there were 288 establishments (exclusive of duplication) in Alaska engaged in the fisheries trade. Of this number, 154 canned fish, 119 cured fish, 36 handled fresh and frozen fishery products, and 27 manufactured by-products. The output of these establishments amounted to 414,183,105 pounds, valued at $54,553,376. The salmon industry was by far the most important and produced 308,691,203 pounds of products, valued at $47,487,763. In value the halibut industry was next in importance and produced 31,567,000

pounds of products valued at $3,094,000. The herring industry ranked third and produced 63,047,653 pounds of products, valued at at $3,098,457. Of the remainder, whales, shrimp, and clam products were most important in value.

In considering the various industries separately, the canning industry ranked foremost and produced 292,224,451 pounds of fishery products, valued at $45,498,498. In value the fresh-fish industry ranked second, with a production of 29,178,585 pounds, valued at $2,934,533; the cured-fish industry ranked third with a production of 24,528,006 pounds, valued at $2,717,294; the by-products industry ranked fourth with an output of 49,655,733 pounds, valued at $2,187,838; and the frozen-fish industry ranked fifth, accounting for the remaining products, amounting to 18,596,330 pounds, valued at $1,215,213. The complete statistics for 1928 are published in the report "Alaska fishery and fur-seal industries, 1928," and in Statistical Bulletin No. 831.

COMMON AND SCIENTIFIC NAMES OF FISHERY PRODUCTS

In order to prevent misunderstanding from the use of common names employed in the tables and discussions, the following list of common and scientific names is given.

Common and scientific names of the commercial fishery products caught in the United States and Alaska

Common name as shown in bureau reports	Other common names	Scientific names
Albacore	Longfin tuna	*Germo alalunga.*
Alewives	Branch herring, wall-eyed or big-eyed herring.	*Pomolobus pseudoharengus.*
	Blueback, glut herring	*Pomolobus æstivalis.*
Amberjack		Seriola sp.
Anchovies		*Engraulis mordax.*
		Anchoviella delicatissima.
		Anchoviella compressa.
Angelfish		*Pomacanthus arcuatus.*
		Angelichthys isabelita.
Barracuda		*Sphyræna argentea* (Pacific coast).
		Sphyræna barracuda (Atlantic coast).
Black bass	Small-mouthed bass	*Micropterus dolomieu.*
	Large-mouthed bass	*Micropterus salmoides.*
Bluefish	Tailor	*Pomatomus saltatrix.*
Blue pike	Pike-perch, blue pickerel (Canada)	*Stizostedion glaucum.*
Blue runner or hardtail	Runner	*Caranx crysos.*
Bonito		*Sarda sarda.*
		Euthynnus pelamis.
Bowfin		*Amia calva.*
Buffalofish		Ictiobus sp.
Bullhead		Ameiurus sp.
Butterfish	Dollarfish	*Poronotus triacanthus.*
Burbot	Lawyer, ling	*Lota maculosa.*
Cabio	Coal-fish, crab eater, sergeantfish, cobia.	*Rachycentron canadum.*
Carp (German)		*Cyprinus carpio.*
Catfish		Siluridæ sp.
Cero		*Scomberomonus regalis.*
Chubs	Tullibee in Canada; longjaws, bluefin, blackfin in United States.	All Leucichthys except *artedi* (in Great Lakes).
Cisco	Herring in Canada	*Leucichthys artedi* (Lake Erie only).
Cod	Codfish	*Gadus macrocephalus* (Pacific coast).
		Gadus callarias (Atlantic coast).
Cowfish	Trunkfish, chapin	Ostracion sp.
Crappie	White crappie	*Pomoxis annularis.*
	Black crappie, strawberry bass, calico bass.	*Pomoxis sparoides.*
Crevalle		*Caranx hippos.*
Croaker	Crocus, hardhead	*Micropogon undulatus.*
Cunner	Chogset, blue perch, bergall	*Tautogolabrus adspersus.*
Cusk		*Brosmius brosme.*
Dolly Varden trout	Salmon trout, bull trout	*Salvelinus parkei.*
Drum, fresh-water, or sheepshead.	White perch, gaspergou	*Aplodinotus grunniens.*
Drum, black		*Pogonias cromis.*
Drum, red	Channel bass ,redfish spotted bass	*Sciænops ocellatus.*

Common and scientific names of the commercial fishery products caught in the United States and Alaska—Continued

Common name as shown in bureau reports	Other common names	Scientific names
Eels		*Anguilla rostrata.* *Leptocephalus conger.* *Gymnothorax mordax.* *Gymnothorax moringua.*
Eulachon	Candlefish	*Thaleichthys pacificus.*
Flounders	Dabs, blackbacks, lemon sole, winter flounder, summer flounder.	Pleuronectidae sp.
Flying fish		*Cypsilurus californicus.*
Gizzard shad	Nanny shad, mud shad	*Dorosoma cepedianum.*
Goldfish	Sand perch	*Carassius auratus.*
Grayfish	Dogfish Spiny dog Smooth dog	*Squalus sucklii* (Pacific coast). *Squalus acanthias.* *Galeohinus lævis.*
Greenfish	Rudderfish	*Girella nigricans.*
Groupers		Epinephelus sp. Mycteroperca sp.
Grunts	Margatefish, sailor's choice (Key West).	Hæmulon sp.
Haddock		*Melanogrammus aegilfinus.*
Hake	Squirrel hake, Boston hake, ling, black hake, mud hake. Merluccio	Urophycis sp. (Atlantic coast). *Merlucius productus* (Pacific coast).
Halfmoon		*Medialuna californiensis.*
Halibut		*Hippoglossus hippoglossus.*
Halibut, "California"		*Paralichthys californicus.*
Hardhead		*Orthodon microlepidotus.*
Harvestfish	Starfish, pappyfish	*Peprilus alepidotus.*
Herring		*Clupea harengus* (Atlantic coast). *Clupea pallasii* (Pacific coast).
Hickory shad	Tailor shad	*Pomolobus mediocris.*
Hog-choker		*Achirus fasciatus*
Hogfish	Capitaine, perro perro	*Lachnolaimus maximus* (Florida)
Jewfish		*Promicrops itaiara.*
Kingfish		*Scomberomorus cavalla.*
Kingfish (California)	Little roncador, croaker	*Genyonemus lineatus.*
King whiting	Northern whiting, kingfish, sea mink	Menticirrhus sp.
Ladyfish	Bonefish, banana fish	*Albula vulpes.*
Lake herring	Herring	*Leucichthys artedi* (Great Lakes, except Erie).
Lake trout		*Cristivomer namaycush.*
Launce	Sand eel, lant, sand launce	*Ammodytes americanus.*
"Lingcod"	Cultus cod, blue cod, buffalo cod, ling.	*Ophiodon elongatus.*
Mackerel		*Scomber scombrus* (Atlantic coast). *Scomber diego* (Pacific coast).
Menhaden	Mossbunker, pogy	*Brevoortia tyrannus.*
Moon-eye	Toothed herring	Hiodon sp.
Moonfish		*Vomer setipinnis.* *Selene vomer.*
Mullet	Jumping mullet	Mugil sp
Mummichog	Mayfish, killifish	Fundulus sp.
Muttonfish		*Lutianus analis.*
Paddlefish	Spoonbill cat	*Polyodon spathula.*
Parrotfish		Scaridæ sp.
Perch, white	White perch Blue perch, surf-fishes	*Morone americana.* Embiotocidæ sp. (Pacific coast).
Perch, yellow	Winged perch	*Perca flavescens.*
Permit	Great pompano	*Trachinotus goodei.*
Pickerel		*Esox reticulatus.* *Esox americanus.*
Pigfish		*Orthopristis chrysopterus.*
Pike (jacks)	Great Lakes pike, pickerel	*Esox lucius.*
Pilchard	Sardine	*Sardinia cærulea.*
Pilotfish		*Naucrates ductor.*
Pinfish	Bream, salt-water bream	*Lagodon rhomboides.*
Pollock		*Pollachius virens.*
Pompano		Trachinotus sp. (Atlantic coast). *Palometa simillimus* (Pacific coast).
Porgies	Porgee	Calamus sp.
Porkfish	Sisi	*Anisotremus virginicus.*
Quillback	Spearfish or skimfish	Carpiodes sp.
Roach	Shiner	*Notemigonus crysoleucas.*
Rock bass	Sand bass Red-eye, goggle-eye	Paralabrax sp. (Pacific coast). *Ambloplites rupestris* (Mississippi River and tributaries).
Rockfishes	Rock cod	Sebestodes sp. (Pacific coast).
Rosefish		*Sebastes marinus.*
Sablefish	Black cod	*Anaplopoma fimbria.*

Common and scientific names of the commercial fishery products caught in the United States and Alaska—Continued

Common name as shown in bureau reports	Other common names	Scientific names
Salmon:		
Atlantic		*Salmo salar* (Atlantic coast).
Pacific—		
King, chinook, or spring	Tyee, Columbia, Sacramento	*Oncorhynchus tschawytscha.*
Red or sockeye	Blueback	*Oncorhynchus nerka.*
Coho or silver		*Oncorhynchus kisutch.*
Humpback or pink.		*Oncorhynchus gorbuscha.*
Chum or keta	Dog salmon	*Oncorhynchus keta.*
Steelhead		(See steelhead trout.)
Sauger pike	Sand pike	*Stizostedion canadense.*
Scamp		*Mycteroperca phenax.*
Sculpin		Cottidæ sp.
Scup	Paugy or porgy, fair maid	*Stenotomus chrysops.*
Sea bass	Black jewfish or black sea bass	*Stereolepis gigas* (Pacific coast).
	Black sea bass	*Centropristes striatus* (Atlantic coast).
Sea bass, white (California)		*Cynoscion nobilis* (Pacific coast).
Sea gar	Needlefish, billfish, houndfish	Tylosurus sp.
Sea robin		Prionotus sp.
Shad	American shad	*Alosa sapidissima.*
Sheepshead (salt-water)		*Archosargus probatocephalus.*
Sheepshead (fresh-water)	Drum, fresh-water	*Aplodinotus grunniens.*
Sheepshead (Pacific coast)	Redfish, flat head	*Pimelometopon pulcher.*
Silversides	Spearing	Menidia sp.
Silver perch	Sand perch	*Bairdiella chrysura.*
Skipjack	Striped tuna	*Sarda chilensis.*
Smelt		*Osmerus mordax* (Atlantic coast).
		Argentinidæ sp. (Pacific coast).
Snapper, Mangrove	Gray snapper	*Lutianus griseus.*
Snapper, red		*Lutianus blackfordii.*
Snook	Robalo	*Centropomus undecimalis.*
Sole		*Psettichthys melanostictus* (Pacific coast).
Spadefish		*Chædipterus faber.*
Spanish mackerel		*Scomberomorus maculatus.*
Splittail		*Pogonichthys macrolepidotus.*
Spot	Lafayete, goody	*Leiostomus xanthurus.*
Squawfish	Sacramento pike	*Ptychocheilus oregonensis.*
Squeteague (gray)	Gray trout, weakfish, trout	*Cynoscion regalis.*
Squeteague (spotted)	Spotted weakfish, spotted trout	*Cynoscion nebulosus.*
Steelhead trout	Salmon trout	*Salmo gairdneri.*
Striped bass	Rockfish, rock	*Roccus lineatus.*
Sturgeon		Acipenser sp.
Sturgeon, shovel-nosed		*Scaphirhynchus platorynchus.*
Sucker	Fresh-water mullet	Catostomidæ sp.
Sunfish		Lepomis sp.
		Centrarchidæ sp.
Swellfish	Puffer, swell toad, balloonfish, globefish.	*Spheroides maculatus.*
Swordfish		*Xiphias gladius.*
Tang		Hepatus sp.
Tarpon	Silver king	*Tarpon atlanticus,*
Tautog	Blackfish, oysterfish	*Tautoga onitis.*
Ten-pounder	Elops	*Elops saurus.*
Thimble-eyed mackeral	Bull's-eye	*Scomber colias.*
Tilefish		*Lopholatilus chamæleonticeps.*
Tomcod		*Microgadus tomcod* (Atlantic coast).
		Microgadus proximus (Pacific coast).
Tripletail		*Lobotes surinamensis.*
Tuna	Blufin tuna, tunny, horse mackerel, leaping tuna.	*Thunnus thynnus.*
Turbot	Greenland halibut, American turbot	*Reinhardtius hippoglossoides.*
		Balistes carolinensis.
White bass	White lake bass	*Roccus chrysops.*
White bait		Small fry of any fish.
Whitefish		*Coregonus clupeiformis* (Great Lakes)
		Caulolatilus princeps (Pacific coast)
Whiting	Silver hake	*Merluccius bilinearis.*
Wolffish		*Anarrhichas lupus.*
Yellow bass		*Morone interrupta.*
Yellow perch		*Perca flavescens.*
Yellow pike	Wall-eyed pike, pike perch, dore	*Stizostedion vitreum.*
Yellowfin tuna		*Neothunnus macropterus.*
Yellowtail		*Ocyurus chrysurus* (Atlantic coast).
		Seriola dorsalis (Pacific coast).
Abalone		Halotis sp.

Common and scientific names of the commercial fishery products caught in the United States and Alaska—Continued

Common name as shown in bureau reports	Other common names	Scientific names
Clams:		
Hard	Round clam, quahog, little neck	*Tivela stultorum* (Pacific coast). *Venus mercenaria* (Atlantic coast). *Venus mortoni* (Florida coast).
Cockle		*Cardium corbis.*
Soft	Sand clam, soft-shelled clam, nanny-nose.	*Mya arenaria.*
Razor		*Siliqua patula* (Pacific coast).
Pismo		*Tivela stultorum* (Pacific coast).
Conchs		Strombus sp. Busycon sp.
Crabs:		
Stone		*Menippi mercenaria.*
Soft	Soft-shelled crab, blue crab	*Callinectes sapidus.*
Hard	Hardshell crab, blue crab	Do.
	Dungeness crab	*Cancer magister* (Pacific coast).
	Rock crab, hard crab	*Cancer irroratus* (Atlantic coast).
King	Horseshoe crab	Limulus.
Spider	Toad crab	*Hyas coarctatus.*
Crawfish	Crayfish	Cambarus sp. (Atlantic coast). Astacus sp. (Pacific coast).
Lobsters:		
Common		*Homarus americanus* (Atlantic coast).
Spiny	Rock lobster, crayfish	*Panulirus interruptus* (Pacific coast). *Panulirus argus* (Atlantic coast).
Mussels		*Mytilus californianus* (Pacific coast). *Mytilus edulis.*
Octopus		*Octopus punctatus* (Pacific coast).
Oysters:		
Eastern		*Ostrea elongata.*
Western	Olympia	*Ostrea lurida* (Pacific coast).
Japanese (introduced)		*Ostrea gigas.*
Periwinkles		Littorina sp.
Scallops:		
Sea		*Pecten magellanicus.*
Bay		*Pecten irradians* (Atlantic coast). *Pecten æquisulcatus* (Pacific coast).
Shrimp		*Peneus setiferus.* *Peneus brasiliensis* (Atlantic and Gulf coasts). Pandalus sp. (Pacific coast). Pandalopsis sp. (Pacific coast). Crangon sp. (Pacific coast).
Snails		Gastropoda sp.
Squid		*Loligo opalescens* (Pacific coast). *Loligo pealei* (Atlantic coast).
Turtles:		
Green		*Chelonia mydas.*
Loggerhead		*Thalassochelys caretta.*
Hawksbill		*Chelonia inbricata.*
Snapping	Mud turtle, mossback	*Chelydra serpentina.*
Terrapin	Diamond-back terrapin	*Malacoclemmys palustris.*
Frogs		Rana sp.

METHODS USED IN COLLECTING STATISTICS

In order that persons using the statistics in this report may judge as to their completeness and authenticity, there follows an outline of the methods employed by the bureau in collecting fishery statistics. It will be noted that several methods are used. Each, in so far as possible, is the most efficient that can be developed to accomplish the desired result with the available personnel.

General fishery statistics.—The purpose of collecting general fishery statistics is to obtain statistics on the catch of fishery products and its value as landed by the fishermen, the quantity or number of each kind of gear used, the number of fishing boats, the number and net tonnage of fishing and transporting vessels, the number of wholesale establishments, the amount of wages and salaries paid in these establishments, the quantity and value of products prepared, and the number of persons engaged in each phase of the industry.

The scope of the coastal surveys includes the commercial fisheries of the oceans, bays, and coastal rivers as far inland as commercial fishing is important. This usually coincides with the range of commercial fishing for anadromous species. Statistics of the fisheries of the Mississippi River include the fisheries of the Mississippi River proper as well as all tributaries wherein commercial fishing for either fish, crustaceans, or mollusks is prosecuted. Statistics of the lake fisheries include those prosecuted in the Great Lakes, adjacent bays, and the International lakes of northern Minnesota, as well as certain rivers having outlets into these waters.

General statistics of the fisheries of the United States are not collected each year, but each year statistics are collected for one or more geographical sections. The aggregate of these statistics for the various years is taken to represent an average year.

In conducting these surveys it is the custom of the bureau to dispatch agents to the district or districts to be surveyed early in the calendar year. They obtain statistics on operations during the previous calendar year, except that statistics of the oyster fishery are obtained for the season ending in the spring of the previous year. The agents conducting these surveys are trained men or recruits working under the close supervision of trained men. Recruits are permitted to work individually only after proving a satisfactory aptitude for the work during their training period. While it is impossible for the few agents available to interview each fisherman in a given locality, the more important ones are visited and a sufficient number of those of lesser importance are interviewed to obtain reliable information on their production. In practice, virtually all wholesale firms are visited, as well as captains of fishing vessels (over 5 net tons) and also all the more important shore fishermen and representative small producers.

As an aid in locating fishermen, lists of vessel and motor-boat owners are obtained from local customs houses. It is also often possible to obtain the names of licensed commercial fishermen and occasionally some statistics of the catch from the various State fishery agencies. In the Great Lakes and Pacific Coast States such exceptional cooperation has been obtained from the State agencies in recent years that only fragmentary surveys are made by the bureau to supplement missing data.

For the Great Lakes and international lakes of northern Minnesota the bureau obtains catch statistics and usually the value of the catch direct from the State records. To obtain data on the fishermen, boats, vessels, and gear the bureau conducts such personal surveys among the fishermen as may be necessary to supplement the State records. Statistics of the wholesale industry have not been obtained since 1922. Annual catch statistics are available since 1913.

An agent is stationed at Seattle, Wash., who surveys each of the Pacific Coast States annually to supplement data that is missing from the State records. In most cases the value of the catch is derived from dealers' records and from estimates of prices. In Washington and Oregon the offshore fisheries are surveyed separately for units of operation, catch, and value of the catch. In almost all other respects the statistics are as collected by the States. Statistics of the wholesale industry for this district have not been obtained since 1922.

A variation from the above method is found in Connecticut, where in recent years a State employee has obtained statistics on the catch, value of the catch, and operating units. This bureau has furnished blanks for the purpose, and completed schedules are forwarded to the bureau for compilation.

The fisheries of Alaska are conducted primarily by large operators. Sworn statements are required from these operators concerning their operations. These are collected and compiled by the Alaska division of this bureau. Bulletins containing statistics for each district are released following the survey.

Atlantic mackerel fishery.—Complete statistics on the catch by the Atlantic mackerel fleet are obtained by combining the figures of those landed at Boston and Gloucester, Mass., and Portland, Me., with those obtained by agents who in recent years have been stationed at other Atlantic ports where mackerel are landed. These agents obtain data on each fare of mackerel landed, similar to the data obtained on the landings by fishing vessels at the three New England ports. Complete statistics of this fishery appear only in the annual reports of this division, although the landings at the principal New England ports appear in the monthly and annual bulletins published for those ports.

Pacific halibut fishery.—Statistics of the Pacific halibut fishery are obtained by the bureau's agent in Seattle, aided by bureau representatives in Alaska and American consuls in British Columbia. The fleet classification has been arbitrarily applied by including in the "Washington fleet" all vessels that land more than half of their catch in that State. All other American vessels of the halibut fleet are included in the Alaska fleet. Monthly and annual statistical bulletins are available on this fishery, being published along with the statistics of the landings of fishery products at Seattle, Wash.

Shad and alewife fisheries.—Due to the importance of the Hudson and Potomac Rivers in the production of shad, surveys for statistics of the catch, value of the catch, and operating units are made annually. On the Potomac River similar statistics also are obtained for the alewife fishery. The surveys are conducted by agents in a manner similar to that employed in the collection of general statistics, except that probably more fishermen are interviewed as great care is exercised to make these canvasses as accurate as possible.

The State of New York obtains statistics for the fisheries of the Hudson River that closely parallel those desired by the bureau for this fishery, which alleviates the work on this river. Both Maryland and Virginia license the shad and alewife fishermen of the Potomac River, which gives a very satisfactory list of fishermen for the agents surveying this district.

Statistics of the shad and alewife fisheries are not published separately in bulletin form, but a summary of the year's activities is published in the annual report of this division.

Fisheries of Lakes Pepin and Keokuk.—As a means of ascertaining the effect of the Keokuk dam upon the fisheries of the upper Mississippi River, annual statistics of the fisheries of Lakes Pepin and Keokuk are obtained by personal surveys conducted by employees of the bureau at the Fairport (Iowa) biological station. Their methods are like those employed in the general surveys. The

statistics are not published in bulletin form, but summaries of production appear in the annual reports of this division.

Fisheries of Lake Okeechobee.—Statistics of the fisheries for Lake Okeechobee were obtained for the first time in 1927 as a part of the general statistical canvass of the Gulf States.

Landings at certain important United States ports.—Statistics of the landings at the principal New England ports—Boston and Gloucester, Mass., and Portland, Me.—are similarly obtained. An agent is permanently stationed at each of these ports. His duties include the obtaining of statistics on the quantity of fish landed each day by each fishing vessel, the value of such fish landed, information concerning the date of departure and arrival of the vessel, and also a list of the grounds from which the fish were taken and the gear used in their capture. These statistics are forwarded to the bureau, where compilations are made. Monthly statistical bulletins are issued for these landings as well as annual bulletins summarizing the year's activities.

Landings of fish at Seattle, Wash., are collected by the bureau's agent at that place. Landings are classified as those made by fishing vessels and those made by collecting vessels. Those credited to fishing vessels are made by vessels operating distinctly as primary fishing units, usually in the offshore fisheries, while those credited to collecting vessels are made by transporting vessels that collect fishery products (usually taken in the shore fisheries) from points on Puget Sound. Monthly statistical bulletins are issued for these landings as well as annual bulletins summarizing the year's activities.

Statistics of the combined landings of fish at New York City and Groton, Conn., are obtained by J. H. Matthews, chairman of the statistical committee for the United States Fisheries Association. Statements of these landings are forwarded to the bureau, where they are compiled. These statistics have not included the value of the catch. Monthly bulletins including these data are not issued; however, a summary is published herewith. Current data will be forwarded to interested persons on request.

Statistics of the fishery products handled at the municipal wharf, Washington, D. C., are reported to the bureau daily by agents of the city health department. These are compiled on an annual basis. They are not published in bulletin form, but a summary of the year's activities is published in the annual report of this division.

Canned fishery products and by-products.—Beginning in 1921, the bureau has made annual surveys for statistics of the canned fishery products and by-products industries. These are begun the first week in January of each year for statistics of the production in the preceding year. The surveys occupy usually 6 to 9 weeks' time. During this period agents visit each plant in the United States where there is a production of canned fishery products or by-products. They obtain statistics of the production and value of the production for each commodity. In rare instances, where plants are not easily reached by regular transportation facilities, returns are obtained by mail.

The value shown for canned products constitutes the gross amount received by the packer at the production point, no deductions being made for commissions or expenses.

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Statistics of the canned fishery products and by-products produced in Alaska are received on the same sworn statements that include statistics of the general fisheries. An annual statistical bulletin is issued on this trade.

Packaged-fish trade.—The first complete statistics of the annual production and value of fish packaged in the United States were obtained as a part of the survey for statistics of the canned fishery products and by-products industries. These statistics are not published in bulletin form, but a summary of the production is published in the annual reports of this division.

Cold-storage holdings of fish.—An arrangement has been made with the Bureau of Agricultural Economics, Department of Agriculture, whereby statistics of the cold-storage holdings of the various species of fish, by sections of the United States, are furnished to this bureau monthly. Included with statistics of the holdings is a statement of the quantity of the various species of fish frozen and also the holdings of cured fish. Bulletins showing these statistics are issued monthly.

Sponge market, Tarpon Springs.—A large proportion of the total output of sponges in Florida is handled through the sponge exchange at Tarpon Springs. In view of this, the bureau has arranged with a representative of the exchange to furnish statistics of the quantity and value of the sponges, by variety classification, handled through it annually. In 1927 about 69 per cent of the total quantity of sponges produced in Florida were handled through the exchange. Statistics of the quantity of sponges handled through the exchange are not published in bulletin form, but a summary of the year's activities is published in the annual reports of this division.

Foreign fishery trade.—Statistics on the foreign fishery trade are obtained from compilations made by the Bureau of Foreign and Domestic Commerce. Statistics of all known fishery products imported or exported are assembled in one table and published annually in the report of this division.

Statistical practices.—Practices followed in the collection and tabulation of statistics are explained below.

Days absent.—In computing "days absent" for vessels landing fares at the various ports, the day of departure and the day of arrival are included; thus, a vessel leaving port on the 8th of the month and returning on the 15th of the month will be shown as being absent eight days.

Operating units.—Operating units as referred to in this document include persons engaged and fishing craft and gear employed.

Vessels.—The term "vessels" refers to craft having a capacity of 5 net tons or greater.

Percentages.—Percentages are usually shown as whole numbers. Fractions of per cents are dropped if less than five-tenths, and the percentage is raised to the next higher integer if the fraction is greater than five-tenths. If the fraction is exactly five-tenths, the integer is raised or lowered to make it an even number.

Converting.—Many of the figures shown in the statistical tables published herewith have been reduced to thousands of pounds or dollars. In making these conversions the largest number from which a group of items is computed is raised or lowered to the nearest thousands place. If the number ends in an even 500, the thousands integer

is raised or lowered to make it an even number. The individual items are changed to conform to the total thus obtained.

Conversion factors.—The principal conversion factors that have been used in this report follow.

Alewives	1 weighs about ⅔ of 1 pound.
Clams, hard	1 bushel equals about 8 pounds of meat.
Clams, soft	1 bushel equals about 10 pounds of meat.
Cod, large, salted	To convert to fresh-gutted weight multiply by 1.90.
Cod, market, salted	To convert to fresh-gutted weight multiply by 1.94.
Cod, scrod, salted	To convert to fresh-gutted weight multiply by 1.98.
Crabs, blue (hard and soft)	1 weighs about ⅓ of 1 pound.
Cusk, salted	To convert to fresh-gutted weight multiply by 1.90.
Haddock, large, salted	To convert to fresh-gutted weight multiply by 2.06.
Haddock, scrod, salted	To convert to fresh-gutted weight multiply by 2.10.
Hake, large, salted	To convert to fresh-gutted weight multiply by 1.90.
Hake, small, salted	To convert to fresh-gutted weight multiply by 1.98.
Halibut, salted	To convert to fresh-gutted weight multiply by 2.
Herring, salted	To convert to fresh-gutted weight multiply by 1.50.
Mackerel, salted	To convert to fresh-gutted weight multiply by 1.35.
Menhaden	1 weighs about ⅔ of 1 pound.
Oysters, market and seed	1 bushel equals about 7 pounds of meat.
Oil (east coast)	1 gallon weighs about 7.5 pounds.
Oil (west coast)	1 gallon weighs about 7.74 pounds.
Pollock, salted	To convert to fresh gutted weight multiply by 1.90.
Scallops	1 bushel equals about 6 pounds of meat.

Persons wishing to obtain copies of all statistical bulletins issued by the bureau should request to be put on the bureau's mailing list No. 132 for general statistical bulletins and No. 135 for the monthly cold-storage reports.

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